3M DryView™ 8700 Laser Imager Service Manual

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The M8700 Service Manual was revised in April, 1996 (Rev. B). All pages should be dated 1/96 except for the following Rev. B pages:

Page	Date
Title page	4/96
a page	4/96
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All functional block diagrams	4/96
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⚠ WARNING

This equipment can be an explosive hazard. Do not use in the presence of flammable anesthetics.

⚠ WARNING

This equipment is operated with hazardous voltage which can shock, burn, or cause death.

Remove wall plug before servicing equipment. Never pull on cord to remove from outlet. Grasp plug and pull to disconnect.

Do **not** operate equipment with a damaged power cord.

Do **not** use an extension cord to power this equipment.

Position the power cord so it will not be tripped over or pulled.

Connect this equipment to a grounded outlet.

⚠ WARNING

Never install telephone wiring during a lightning storm.

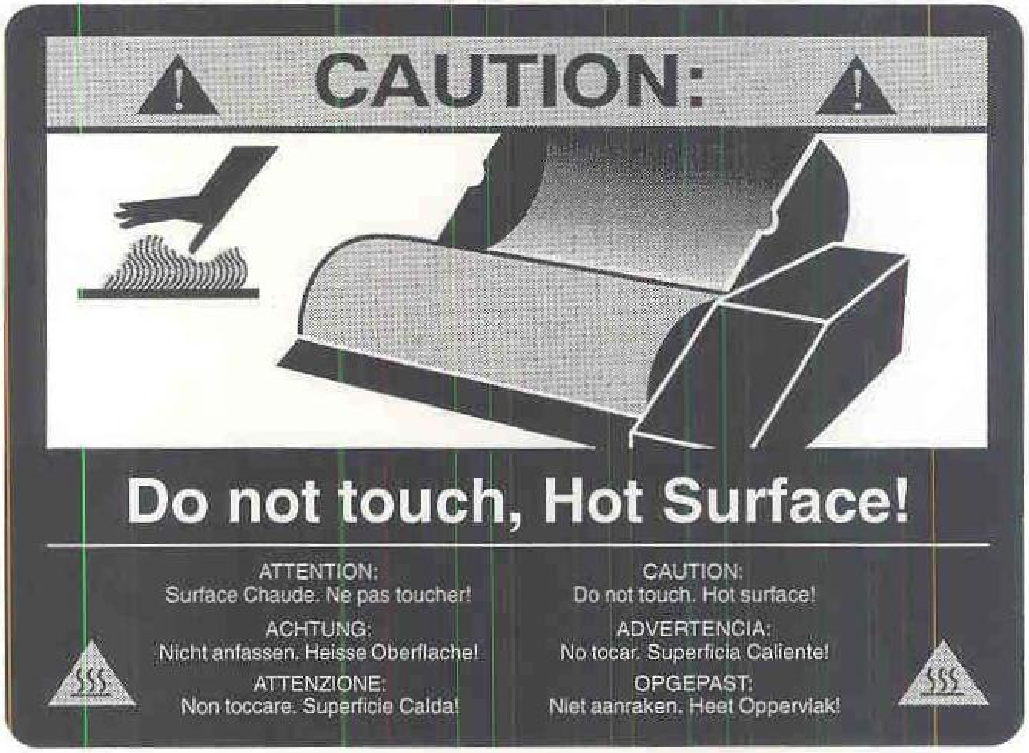
Never install telephone jacks in wet locations unless the jack is specifically designed for wet locations.

Never touch uninsulated telephone wires or terminals unless the telephone line has been disconnected at the network interface.

Use caution when installing or modifying telephone lines.

Avoid using a telephone (other than a cordless type) during an electrical storm. There may be a remote risk of electric shock from lightning.

Do not use the telephone to report a gas leak in the vicinity of the leak.



CAUTION:

Do not touch, Hot Surface!

ATTENTION:
Surface Chaude. Ne pas toucher!

ACHTUNG:
Nicht anfassen. Heisse Oberflache!

ATTENZIONE:
Non toccare. Superficie Calda!

CAUTION:
Do not touch. Hot surface!

ADVERTENCIA:
No tocar. Superficia Caliente!

OPGEPAST:
Niet aanraken. Heet Oppervlak!

⚠ CAUTION

Avoid Laser Beam

This equipment employs a 150 milliwatt laser. Laser radiation may be present when the machine operates without panels or covers installed.

Use of controls or adjustments, or performance of procedures other than those specified herein, may result in eye damage.

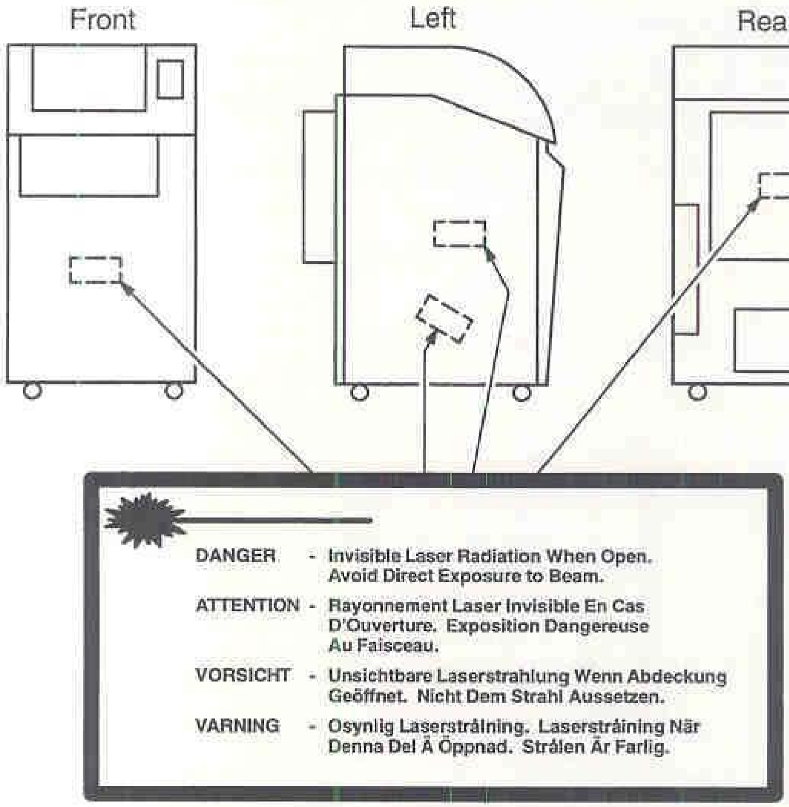
Covers shall be removed by authorized service personnel only.

Class 1 Laser
Laser de catégorie 1
Laser-Klasse 1
Laser di Classe 1
Klass 1 Laser

⚠ CAUTION

This equipment generates, uses, and can radiate radio frequency energy, and if not installed by qualified service personnel and used in accordance with the Operator's Guide, may cause interference to radio communications and other electronic devices. Operation of this equipment in a residential area may cause interference, in which case the user at their own expense will be required to take whatever measures may be required to correct the interference.

This equipment is intended to connect to other medical devices. Installation and service maintenance are to be performed only by qualified service personnel.



DANGER - Invisible Laser Radiation When Open. Avoid Direct Exposure to Beam.

ATTENTION - Rayonnement Laser Invisible En Cas D'Ouverture. Exposition Dangereuse Au Faisceau.

VORSICHT - Unsichtbare Laserstrahlung Wenn Abdeckung Geöffnet. Nicht Dem Strahl Aussetzen.

VARNING - Osynlig Laserstrålning. Laserstråining När Denna Del Å Öppnad. Strålen Är Farlig.

8700 **Safety, EMC, and CE Marking Compliance**

This equipment has been tested for and complies with the following Safety and Emission Standards. Certificates of Compliance and Declarations of Conformity have been issued as shown below.

Safety:

Canada:	CSA-C22.2 #950-M91	Safety for Information Technology Equipment
	CSA-C22.2 #225-M90	Safety for Telecommunications
	CSA-CS-03	Rules for Telcom Equip
Europe:	EN60950	Safety for Information Technology Equipment
	EN60601-1-1	Safety Requirements for Medical Systems
	EN60825, Class 1	Radiation Safety of Laser Products
U. S. A.:	UL 1950	Safety for Information Technology Equipment
	UL 1459	Safety for Telecommunications
	FCC 47CFR Part 68	Rules for Telcom Equip
	FDA 21CFR 1040.10	Performance Standards for Light Emitting Products
	FDA 510K	Market Pre-notification of Medical Devices

EMC:

Canada:	CSA C108.6 Class A	Conducted and Radiated Emissions
Europe:	EN55011 Class B	Conducted and Radiated Emissions
	EN60601-1-2	Electromagnetic Compatibility for Medical Systems
	EN50082-1	Generic Immunity Std
	IEC1000-4-2, 3, 4, 5	Immunity Standards
U. S. A.:	FCC Part 15/B, Class A	Conducted and Radiated Emissions

EU Directives:

Europe:	73/23/EEC	LVD (Low Voltage Directive)
	89/336/EEC	EMC (Electromagnetic Compatibility Directive)
	93/42/EEC	MDD (Medical Device Directive)

CE Marking:

This equipment is part of a medical system and conforms to the medical safety and EMC requirements through the use of fiber-optic isolation techniques based on the requirements in EN60601-1-1, EN60601-1-2, and the 93/42/EEC, MDD (Medical Device Directive).

A Technical File and the Declaration of Conformity have been prepared and signed by the appropriate manufacturing personnel and are located at 3M, Medical Imaging Systems Division, St. Paul, MN, USA. For additional information, call the 3M Health Care Customer Helpline at 1-800-228-3957, extension 71332.

FCC:

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and

(2) This device must accept any interference received, including interference that may cause undesired operation.

DOC:

This Class A digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.

Cet appareil numérique de la Classe A respecte toutes les exigences du Règlement sur le matérial brouilleur du Canada.

EU:

This equipment complies with the January 1996 EU Community EMC Requirements, per EN55011 Class B.

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1-1. Dimensions

Height: 1279 mm (50.4 in.) – Top Cover closed
1641 mm (64.6 in.) – Top Cover open

Width: 661 mm (26.0 in.) – Left Door closed
1218 mm (47.9 in.) – Left Door open

Depth: 813 mm (32.0 in.) – Supply and Filter Doors closed
1392 mm (54.9 in.) – Supply and Filter Doors open

Weight: 250 kg (550 lbs)

1-2. Electrical

Voltage: 200/220/240 VAC ± 10%
50/60 Hz ± 3%

Current Draw: 9 Amperes (maximum)

Power Consumption: 2000 V.A. (maximum)

1-3. Storage Environment

Temperature: –35° to 60°C (–31° to 140°F)

Humidity: 10% to 90% RH, Noncondensing

1-4. Operating Environment

Temperature: 15° to 35°C (59° to 95°F)

Humidity: 20% to 85% RH, Noncondensing

Vibration: 0.01 Gs (maximum)

Magnetic Field: ≤ 100 Gauss

1-5. Environmental Effects

Heat Load: 300 BTU/Hr (average)

Floor Load: 125 lb/ft^2 (610 kg/m^2)

Acoustical Noise: 55 dB at one meter
(70 dB momentarily)

1-6. Host Control

- RS232 or RS422 (jumper selectable) connection to imager or UKEIB.
- Can be located up to one kilometer (3280 feet) from imager when using a UKEIB and fiber cable.

1-7. 3M DryView 8700 Keypad

- Available image formats include 1:1, 2:1, 4:1, 6:1, 9:1, 12:1, 15:1, and 20:1.
- Images are acquired and stored in sequential order, from left to right and top to bottom.
- Can be located up to 60 meters (198 feet) from imager (copper cable).

1-8. 3M Keypad

- Available image formats include 1:1, 2:1, 4:1, 6:1, 9:1, 12:1, 15:1, 16:1, and 20:1, as well as up to 4 custom formats (for custom formats, images in the same row must all be the same format).
- Images can be acquired and stored in random or sequential order.
- Can be located up to one kilometer (3280 feet) from imager (fiber cable).

1-9. Agency Compliance – Safety

Canada:

- CSA-C22.2 #950-M91 Safety for Information Technology Equipment
- CSA-C22.2 #225-M90 Safety for Telecommunications
- CSA-CS-03 Rules for Telcom Equip

Europe:

- EN60950 Safety for Information Technology Equipment
- EN60601-1-1 Safety Requirements for **Medical Systems**
- EN60825, Class 1 Radiation Safety of Laser Products

U. S. A.:

- UL 1950 Safety for Information Technology Equipment
- UL 1459 Safety for Telecommunications
- FCC 47CFR Part 68 Rules for Telcom Equip
- FDA 21CFR 1040.10 Performance Standards for Light Emitting Products
- FDA 510K Market Pre-notification of Medical Devices

1-10. Agency Compliance – EMC

Canada:

- CSA C108.6 Class A Conducted and Radiated Emissions

Europe:

- EN55011 Class B Conducted and Radiated Emissions
- EN60601-1-2 Electromagnetic Compatibility for **Medical Systems**
- EN50082-1 Generic Immunity Std
- IEC1000-4-2, 3, 4, 5 Immunity Standards

U. S. A.:

- FCC Part 15/B, Class A Conducted and Radiated Emissions

1-11. Agency Compliance – EU Directives

Europe:

- 73/23/EEC LVD (Low Voltage Directive)
- 89/336/EEC EMC (Electromagnetic Compatibility Directive)
- 93/42/EEC MDD (Medical Device Directive)

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2-1. Unpacking

Note

Steps 1 through 7 of this procedure can be performed by dock personnel or a 3M-trained technician. Steps 8 through 35 must be performed by a 3M-trained technician.

Note

Refer to Figure 2-1 while performing steps 1 through 7 of this procedure.

1. Remove the accessories box from the top of the shipping crate.
2. Remove the wire clamps that secure the front panel of the shipping crate, then remove the front panel.
3. Install the front panel as a ramp:
   a. Lay the front panel down in front of the crate.
   b. Unfold the small ramp at the top end of the front panel.
   c. Set the bottom end of the front panel on the front edge of the crate. Align the holes in the panel with the holes in the crate.
   d. Use the two bolts stored underneath the 8700 to secure the ramp to the crate.
4. Remove the foam packing from the front and top of the 8700.
5. Grasp the tape handle on the front of the 8700. Slowly pull the 8700 out of the crate and ease it down the ramp.
6. Remove the filter from the crate.
7. Roll the 8700 to the installation location.

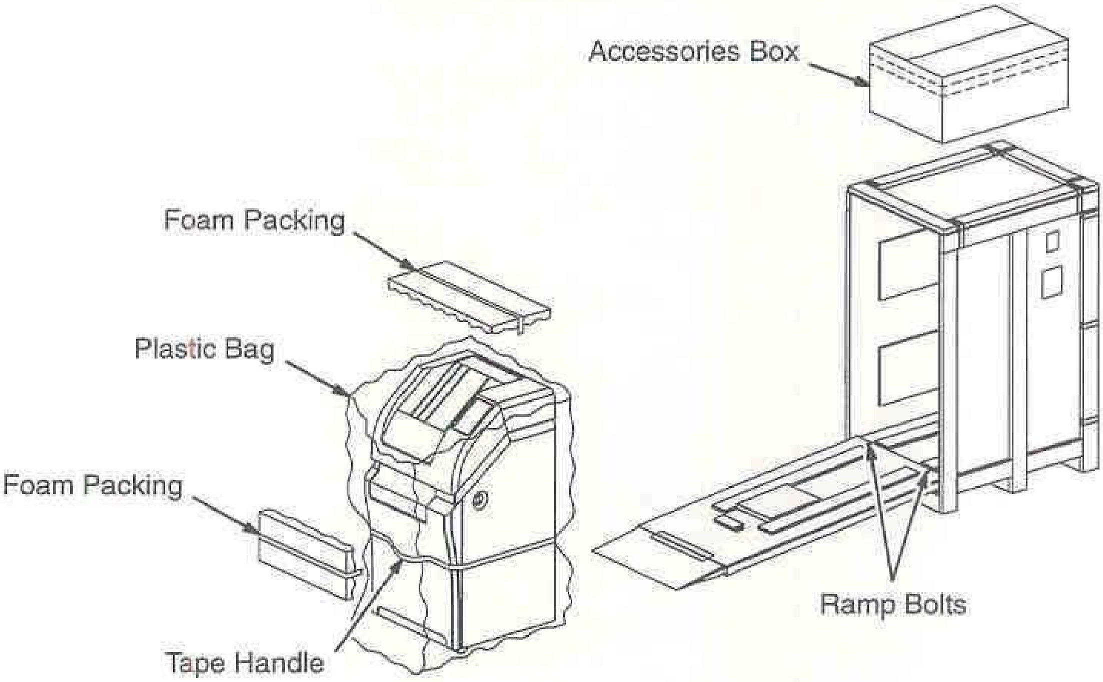
Accessories Box
Foam Packing
Plastic Bag
Foam Packing
Tape Handle
Ramp Bolts

Figure 2-1.

Note

The remaining steps of this procedure must be performed by a 3M-trained technician.

8. Remove the plastic bag from the 8700.
9. Remove the power cord, warranty, operator's guide, and installation kit from the exit tray.
10. Remove all the filament tape from the exterior of the 8700.
11. Remove the plastic sheet from the local panel.
12. Open the top cover.
13. Open the left side and supply doors via their mechanical releases.
14. To gain access to the shipping screw on the right side of the exposure module:
    a. Remove the bracket (three screws) that secures the top edge of the front cover.
    b. Lift the front cover up and away from the frame.

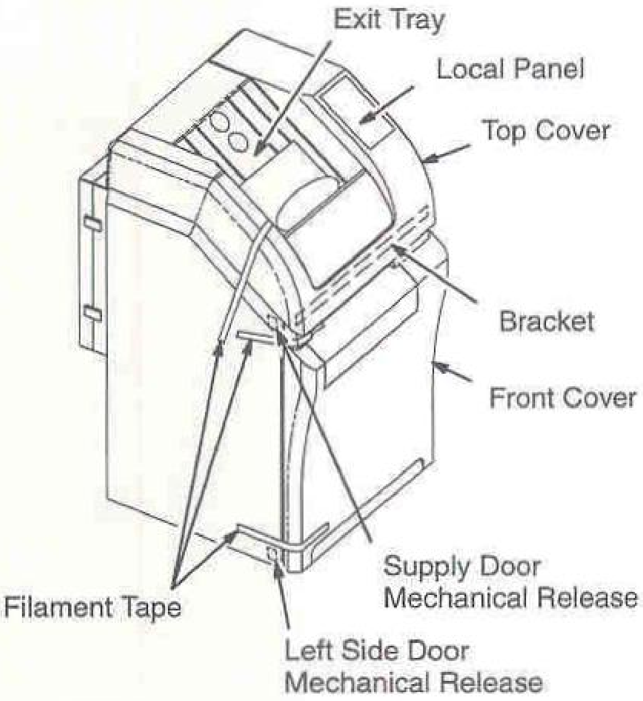
Exit Tray
Local Panel
Top Cover
Bracket
Front Cover
Supply Door Mechanical Release
Filament Tape
Left Side Door Mechanical Release

Figure 2-2.

15. Use a 5mm ball-end Allen wrench to remove the three shipping screws that secure the exposure module to the frame. There are two screws on the left side and one on the right (front). Discard the screws.

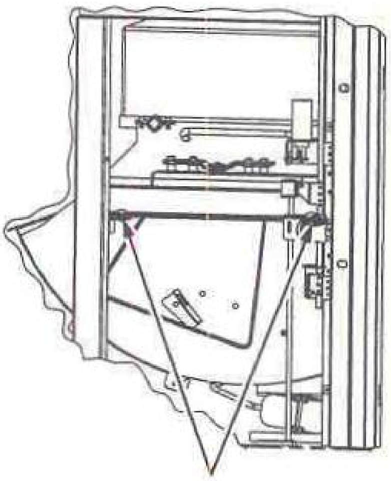

Figure 2-3.

16. Remove the filament tape from the pickup arms.

17. Pull the pickup arms down and remove the foam block located above the pickup assembly.

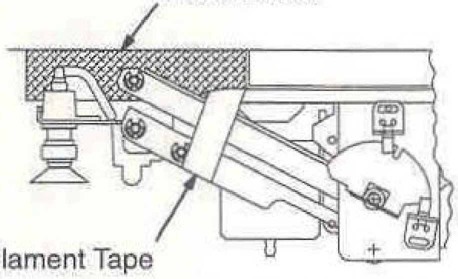

Figure 2-4.

18. Remove the filament tape from the rollback handle.
19. Remove the filament tape from the wood block that is located between the frame and the transport assembly, then remove the wood block.

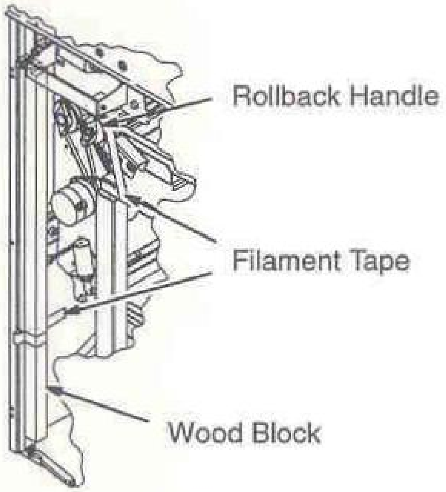
Rollback Handle
Filament Tape
Wood Block

Figure 2-5.

20. Remove the yellow caution tag from the handle on the transport assembly.
21. Squeeze the handle on the transport assembly and pull the assembly out to its extended position.
22. Remove the foam block from the top of the transport assembly.
23. Slide the transport assembly back into place.

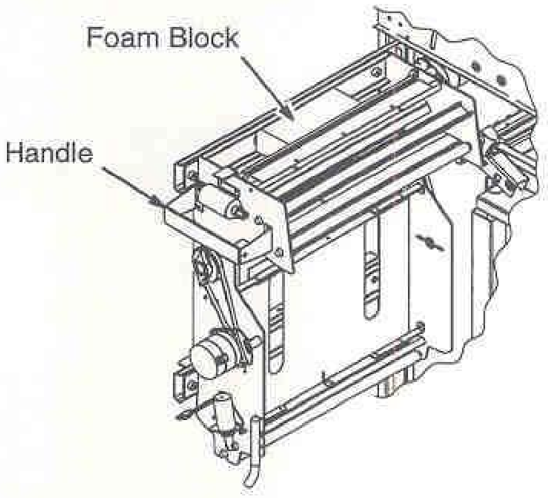

Figure 2-6.

24. Release the processor latch and slide it to the right.

25. Grasp the handle on the front of the processor/exit assembly and pull the assembly out to its extended position.

26. Remove the filament tape from both ends of the processor cover.

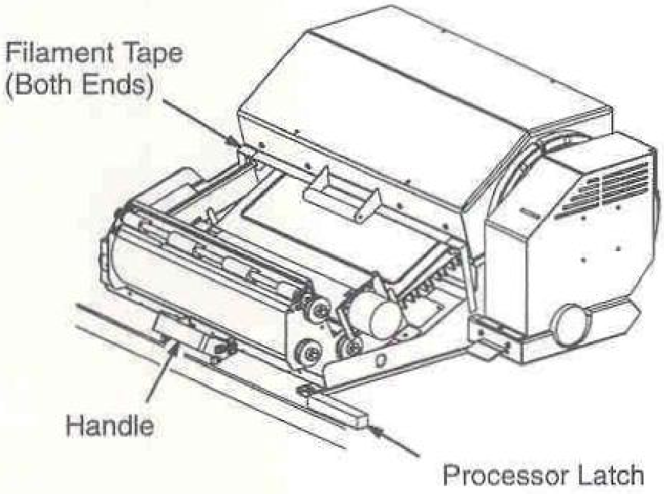
Filament Tape
(Both Ends)
Handle
Processor Latch

Figure 2-7.

27. Open the processor cover.
28. Remove the tape from the foam sheet that is wrapped around the drum, then slowly pull the foam sheet out of the processor.
29. Close the processor cover by lifting the cover slightly and pulling the support arm forward.
30. Press the blue release lever on the right side of the processor, then slide the processor/exit assembly back into place.
31. Slide the processor latch to the left to secure the processor/exit assembly.
32. Install the front cover and bracket.
33. Close the supply door and left side door.
34. Close the top cover by lifting the cover slightly and pushing the support rod backward.
35. Install the filter.

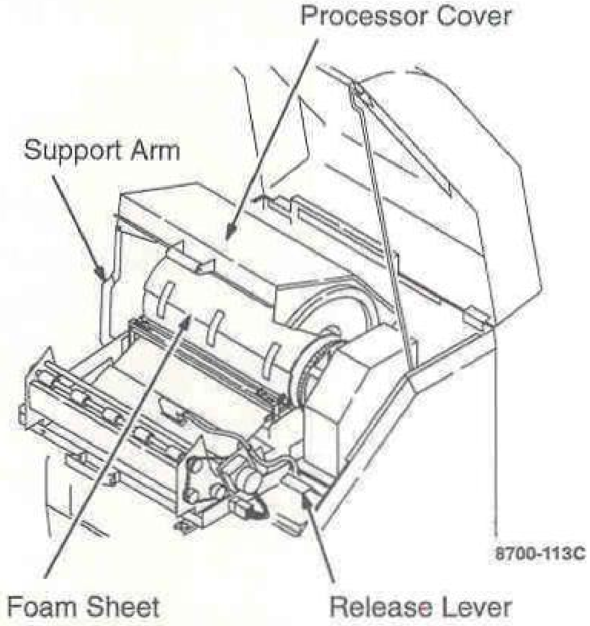

Figure 2-8.

2-2. Voltage Setup

⚠ **Caution**

The 8700 can be configured to connect with 200, 220, or 240 VAC power sources. Before applying power, ensure that the 8700 is set for the voltage that most closely matches the AC line voltage.

1. Measure the AC voltage at the wall outlet.
2. Remove the tag from the handle of the power module at the rear of the 8700. The tag indicates the factory set voltage. If this setting does not match the line voltage, perform the remaining steps of this procedure.

⚠ **WARNING**

When the power cord is plugged in, hazardous voltages are present in some areas of the 8700. These voltages can cause severe injury or death.

3. Flip down the circuit breaker on the rear of the 8700, then unplug the power cord.

4. Remove the ventilation plate from the upper left corner of the power module (to gain access to the terminal block above the transformer). Refer to Figure 2-9.
5. Move the black wire to the terminal that most closely matches the AC line voltage.
6. Replace the ventilation plate.

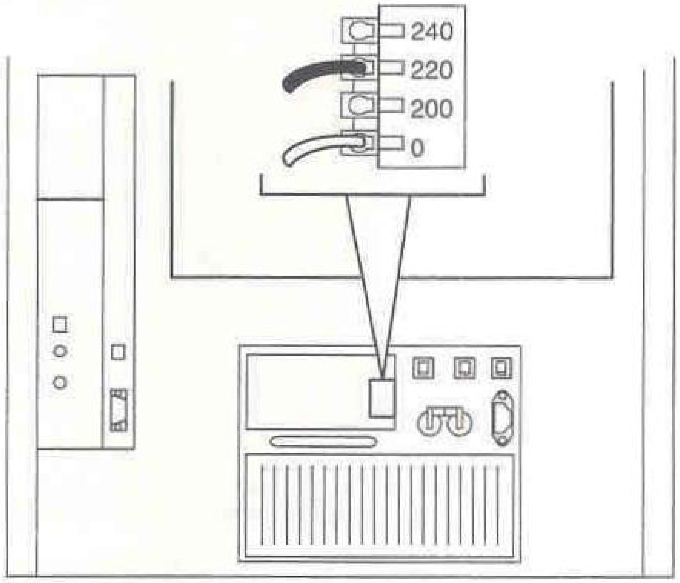

Figure 2-9.

2-3. Cable Connections

2-3-1. 8700 Keypad to TDB/C

1. If a keypad extension cable is being used, connect it to the 8700 keypad cable. Refer to Figure 2-10.
2. Connect the keypad cable (or keypad extension cable) to the TDB/C at the rear of the 8700. Refer to Figure 2-10.

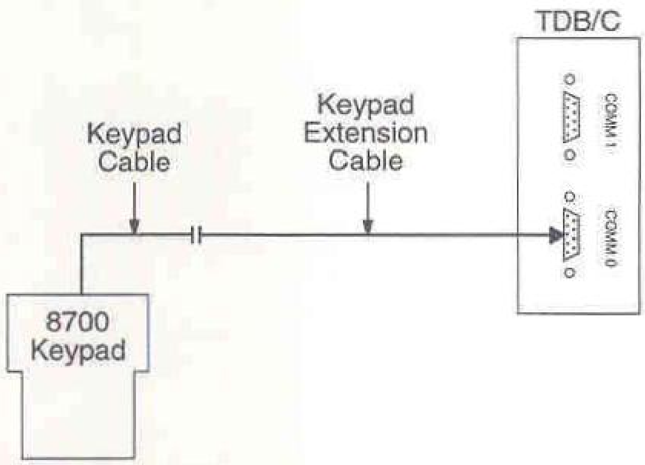
TDB/C
Keypad Cable
Keypad Extension Cable
COMM 1
COMM 0
8700 Keypad

Figure 2-10.

2-3-2. HQ Keypad to KFEIB to TDB/F

Note

The KFEIB (Keypad/Fiber External Interface Box) only supports HQ keypad users. A UKEIB is required for host control users.

1. Connect the keypad cable to the keypad and the KFEIB. Refer to Figure 2-11.

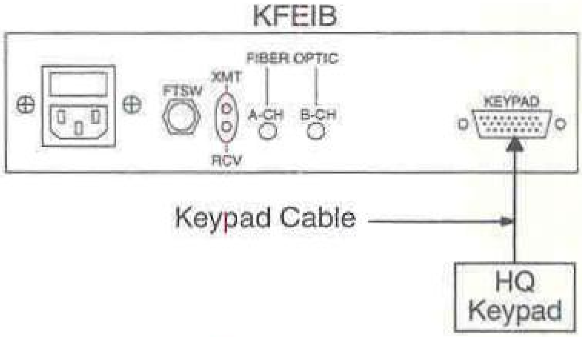
KFEIB
FTSW
XMT
FIBER OPTIC
A-CH
B-CH
RCV
KEYPAD
Keypad Cable
HQ Keypad

Figure 2-11.

2. If an optional footswitch is to be used, connect it to the KFEIB. Refer to Figure 2-12.

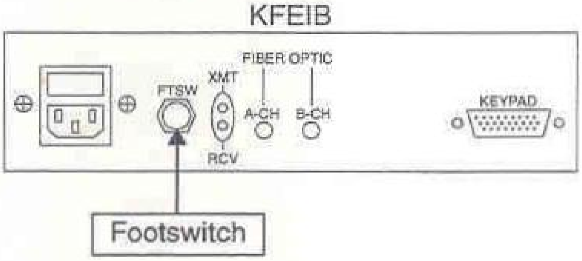
KFEIB
FTSW
XMT
FIBER OPTIC
A-CH
B-CH
RCV
KEYPAD
Footswitch

Figure 2-12.

3. Connect the fiber optic cable to the KFEIB. Refer to Figure 2-13.
4. Connect the fiber optic cable to the TDB/F at the rear of the 8700. Refer to Figure 2-13.

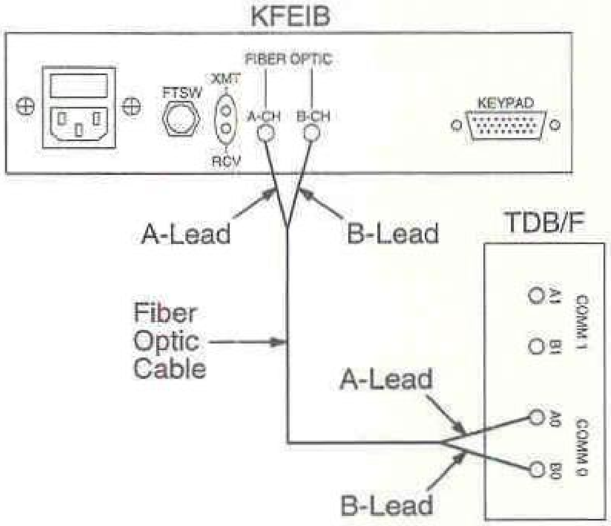
KFEIB
FIBER OPTIC
XMT
FTSW
A-CH
B-CH
RCV
KEYPAD
A-Lead
B-Lead
TDB/F
Fiber Optic Cable
A1
B1
COMM 1
A-Lead
A0
B0
COMM 0
B-Lead

Figure 2-13.

5. Connect the KFEIB power cord. For installations outside the U.S. and Canada, the KFEIB is supplied with a harmonized power cord with no wall plug. For these locations, attach the proper type plug (obtain locally). The KFEIB uses a universal power supply that requires no modification for input voltages in the range of 100 to 240 VAC (50/60 Hz).

2-3-3. HQ Keypad to UKEIB to TDB/C

> **⚠ Caution**
>
> The switches in the UKEIB must be set before any cables are connected to it. Use only approved cables and ensure that the cables are connected to the proper connectors on the UKEIB. If the switches are not set correctly when cables are connected, or unapproved cables are used, or cables are connected incorrectly, components within the UKEIB may be damaged.

1. Set the switches in the UKEIB (Universal Keypad External Interface Box) as required. Refer to Procedure 2-4-1.
2. Connect the keypad cable to the keypad and the UKEIB. Refer to Figure 2-14.
3. If an optional footswitch is to be used, connect it to the UKEIB. Refer to Figure 2-15.

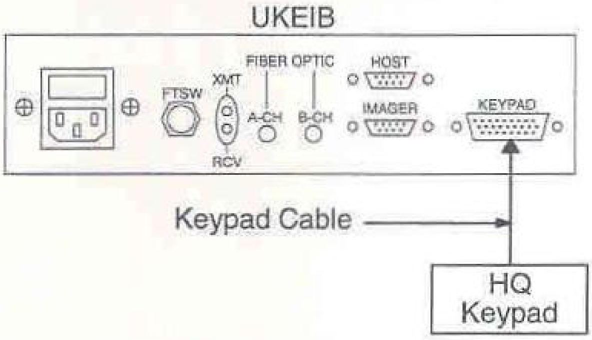
UKEIB
FIBER OPTIC
XMT
FTSW
A-CH
B-CH
RCV
HOST
IMAGER
KEYPAD
Keypad Cable
HQ Keypad

Figure 2-14.

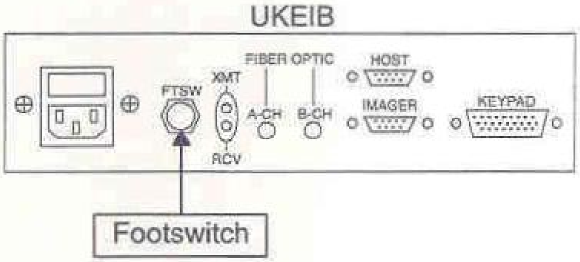
UKEIB
FIBER OPTIC
XMT
FTSW
A-CH
B-CH
RCV
HOST
IMAGER
KEYPAD
Footswitch

Figure 2-15.

4. Connect the KEIB cable to the UKEIB. Refer to Figure 2-16.
5. Connect the KEIB cable to the TDB/C at the rear of the 8700. Refer to Figure 2-16.
6. Connect the UKEIB power cord. For installations outside the U.S. and Canada, the UKEIB is supplied with a harmonized power cord with no wall plug. For these locations, attach the proper type plug (obtain locally). The UKEIB uses a universal power supply that requires no modification for input voltages in the range of 100 to 240 VAC (50/60 Hz).

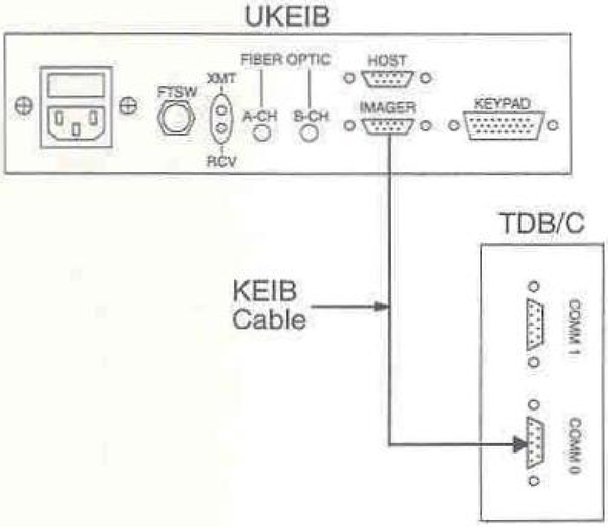
UKEIB
FIBER OPTIC
HOST
XMT
FTSW
A-CH
B-CH
IMAGER
KEYPAD
RCV
TDB/C
KEIB Cable
COMM 1
COMM 0

Figure 2-16.

2-3-4. Host Control to UKEIB to TDB/F

⚠ Caution

The switches in the UKEIB must be set before any cables are connected to it. Use only approved cables and ensure that the cables are connected to the proper connectors on the UKEIB. If the switches are not set correctly when cables are connected, or unapproved cables are used, or cables are connected incorrectly, components within the UKEIB may be damaged.

Note

Refer to subsection 5-4 for pinouts of the various host adapter cables.

Note

A translator keypad is required for hosts programmed with OEM commands. The translator keypad translates the OEM commands to 3M commands that can be interpreted by the 8700. Different translator keypads are required for different OEMs.

1. Set the switches in the UKEIB (Universal Keypad External Interface Box) as required. Refer to Procedure 2-4-1.
2. Connect the host adapter cable to the UKEIB. Refer to Figure 2-17.

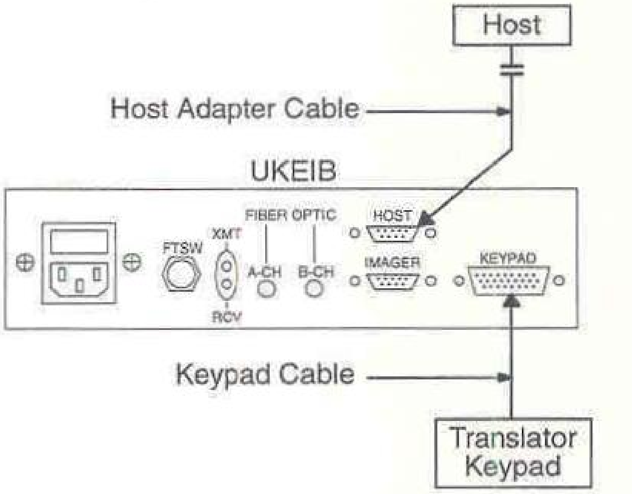
Host
Host Adapter Cable
UKEIB
FIBER OPTIC
HOST
XMT
FTSW
A-CH
B-CH
IMAGER
KEYPAD
RCV
Keypad Cable
Translator Keypad

Figure 2-17.

3. If a translator keypad is required, connect the keypad cable to the keypad and the UKEIB. Refer to Figure 2-17.
4. If an optional footswitch is to be used, connect it to the UKEIB. Refer to Figure 2-18.

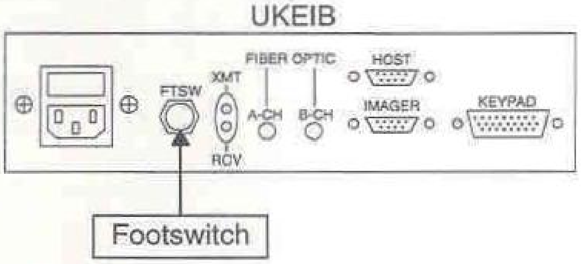
UKEIB
FIBER OPTIC
HOST
XMT
FTSW
A-CH
B-CH
IMAGER
KEYPAD
RCV
Footswitch

Figure 2-18.

5. Connect the fiber optic cable to the UKEIB. Refer to Figure 2-19.
6. Connect the fiber optic cable to the TDB/F at the rear of the 8700. Refer to Figure 2-19.
7. Connect the UKEIB power cord. For installations outside the U.S. and Canada, the UKEIB is supplied with a harmonized power cord with no wall plug. For these locations, attach the proper type plug (obtain locally). The UKEIB uses a universal power supply that requires no modification for input voltages in the range of 100 to 240 VAC (50/60 Hz).

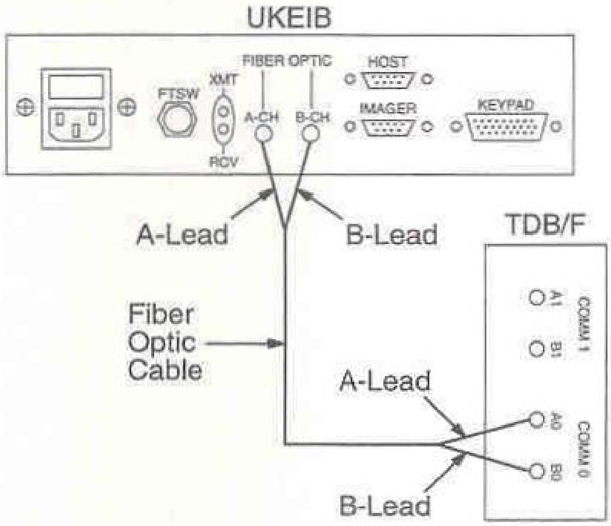
UKEIB
FIBER OPTIC
HOST
XMT
FTSW
A-CH
B-CH
IMAGER
KEYPAD
RCV
A-Lead
B-Lead
TDB/F
Fiber Optic Cable
A1
B1
COMM 1
A-Lead
A0
B0
COMM 0
B-Lead

Figure 2-19.

2-3-5. Video Source to VEIB to FIB

1. Check/set the jumpers in the VEIB. Refer to Procedure 2-4-3.
2. Use an analog cable to connect the video signal from the modality to the appropriate Video In connector on the VEIB. Refer to Figure 2-20.
3. If the modality provides a pixel clock signal, use an analog cable to connect it to the appropriate Ext Clock In connector on the VEIB. Refer to Figure 2-20.

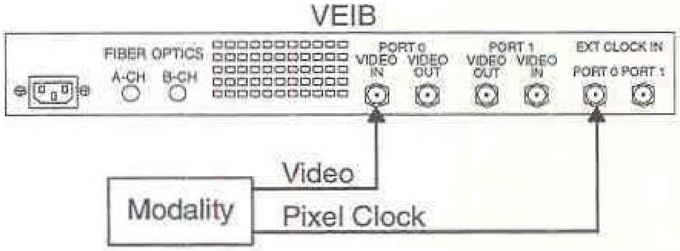
VEIB
FIBER OPTICS
A-CH
B-CH
PORT 0
VIDEO IN
VIDEO OUT
PORT 1
VIDEO OUT
VIDEO IN
EXT CLOCK IN
PORT 0
PORT 1
Video
Modality
Pixel Clock

Figure 2-20.

4. Connect the fiber optic image cable to the VEIB. Refer to Figure 2-21.
5. Connect the fiber optic cable to the FIB at the rear of the 8700. Refer to Figure 2-21.

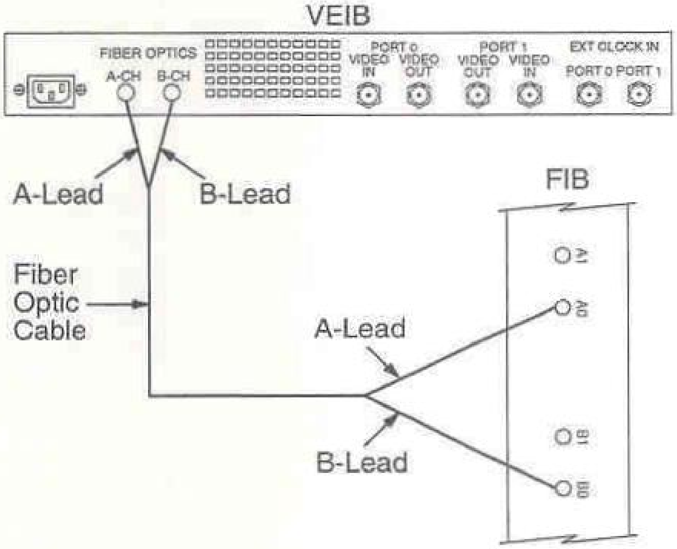
VEIB
FIBER OPTICS
A-CH
B-CH
PORT 0
VIDEO IN
VIDEO OUT
PORT 1
VIDEO OUT
VIDEO IN
EXT CLOCK IN
PORT 0
PORT 1
A-Lead
B-Lead
FIB
Fiber Optic Cable
A-Lead
B-Lead
A1
A0
B1
B0

Figure 2-21.

6. Connect the VEIB power cord. For installations outside the U.S. and Canada, the VEIB is supplied with a harmonized power cord with no wall plug. For these locations, attach the proper type plug (obtain locally). The VEIB uses a universal power supply that requires no modification for input voltages in the range of 100 to 240 VAC (50/60 Hz).

2-3-6. Video Source to VIB

1. Use an analog cable to connect the video signal from the modality to the appropriate Video In connector on the VIB at the rear of the 8700. Refer to Figure 2-22.
2. If the modality provides a pixel clock signal, use an analog cable to connect it to the appropriate Ext Clock In connector on the VIB at the rear of the 8700. Refer to Figure 2-22.

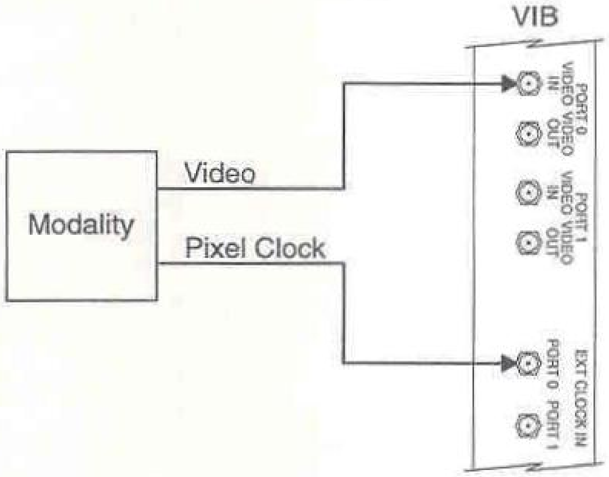
VIB
Modality
Video
Pixel Clock
PORT 0
VIDEO IN
VIDEO OUT
PORT 1
VIDEO IN
VIDEO OUT
EXT CLOCK IN
PORT 0
PORT 1

Figure 2-22.

2-3-7. Digital Source to DEIB to FIB

1. Check/set the jumpers in the DEIB. Refer to Procedure 2-4-5.
2. Use a digital cable to connect the modality to the appropriate Digital In connector on the DEIB. Refer to Figure 2-23.

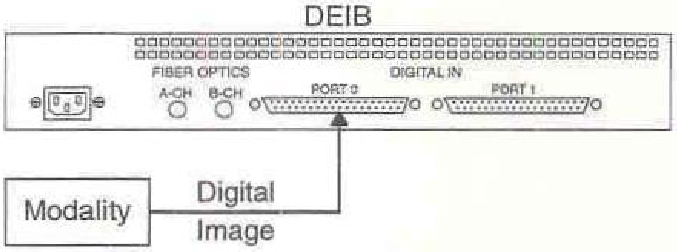
DEIB
FIBER OPTICS
DIGITAL IN
A-CH
B-CH
PORT 0
PORT 1
Modality
Digital
Image

Figure 2-23.

3. Connect the fiber optic image cable to the DEIB. Refer to Figure 2-24.
4. Connect the fiber optic cable to the FIB at the rear of the 8700. Refer to Figure 2-24.

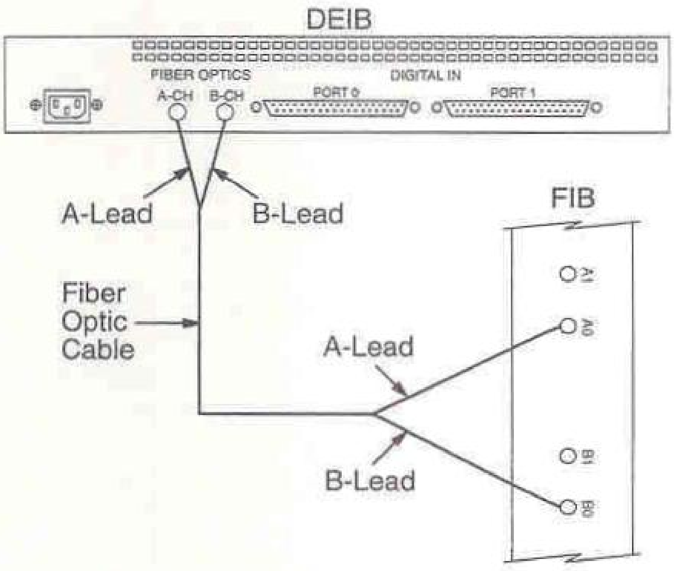
DEIB
FIBER OPTICS
DIGITAL IN
A-CH
B-CH
PORT 0
PORT 1
A-Lead
B-Lead
FIB
Fiber
Optic
Cable
A-Lead
B-Lead
A1
A0
B1
B0

Figure 2-24.

5. Connect the DEIB power cord. For installations outside the U.S. and Canada, the DEIB is supplied with a harmonized power cord with no wall plug. For these locations, attach the proper type plug (obtain locally). The DEIB uses a universal power supply that requires no modification for input voltages in the range of 100 to 240 VAC (50/60 Hz).

2-3-8. Digital Source to DIB

1. Use a digital cable to connect the modality to the appropriate port on the DIB at the rear of the 8700. Refer to Figure 2-25.

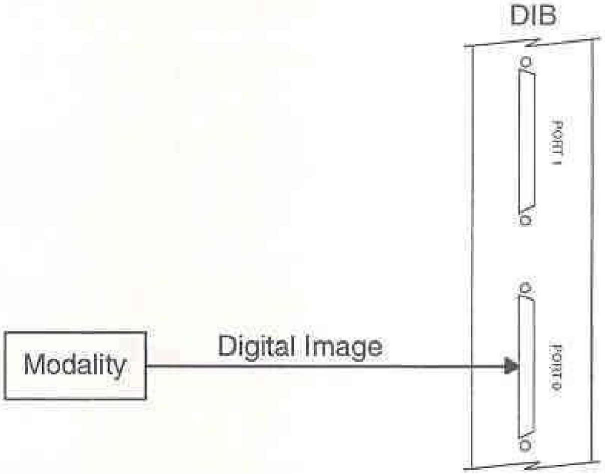

Figure 2-25.

2-3-9. 8800 or 969 HQ to 8700

1. At the 8800 or 969 HQ, route the fiber optic cable through the slot at the rear of the cabinet. Pull the cable across the top of the card cage.
2. Connect the fiber optic cable to the appropriate fiber optic connectors on the local fiber interface. Refer to Figure 2-26. Secure the cable using the hook and loop material on top of the card cage.
3. Connect the fiber optic cable to the DPRI at the rear of the 8700. Refer to Figure 2-26.

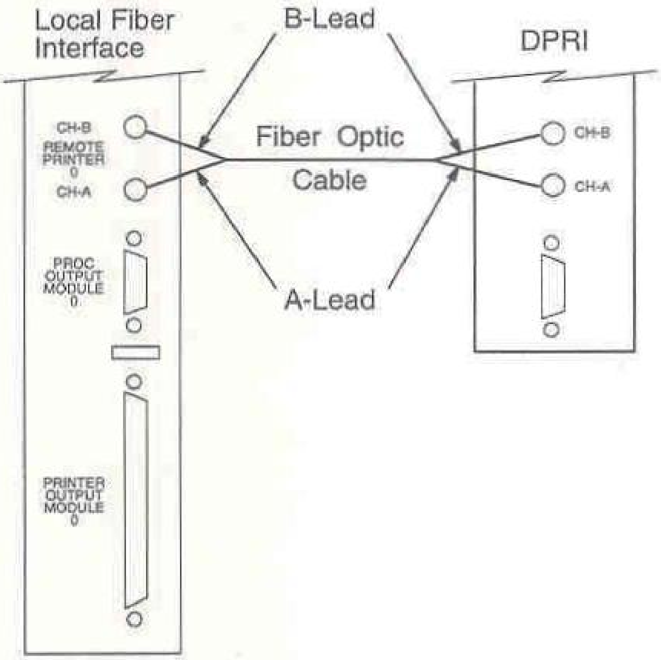
Local Fiber Interface
B-Lead
DPRI
CH-B
REMOTE PRINTER 0
CH-A
Fiber Optic Cable
CH-B
CH-A
PROC OUTPUT MODULE 0
A-Lead
PRINTER OUTPUT MODULE 0

Figure 2-26.

2-4. Switch and Jumper Settings

2-4-1. UKEIB

⚠ Caution

The switches in the UKEIB must be set before any cables are connected to it. If the switches are not set correctly when cables are connected, components within the UKEIB may be damaged.

⚠ Caution

Use only approved cables and ensure that the cables are connected to the proper connectors on the UKEIB. If unapproved cables are used, or cables are connected incorrectly, components within the UKEIB may be damaged.

Note

Refer to Figure 2-27 (on the following page) for switch locations.

Signal Path

SW1 determines which signal path is enabled within the UKEIB. The various control sources require different signal paths. Set the switches as indicated in the table on the following page.

Host Connector Signals

SW2 determines which signals will be present on Pins 5 and 9 of the HOST connector. For normal operation, set SW2 to the center position. If an OEM fiber optic kit is being installed, set SW2 as directed in the kit instructions.

Signal Path Enabled	SW1 Switch Positions					
	1	2	3	4	5	6
Keypad to TDB	On	Off	On	On	On	On
RS232 Host to TDB	Off	On	Off	Off	On	Off
RS422 Host to TDB	Off	On	Off	On	On	On
RS232 Host to Translator Keypad to TDB	On	Off	On	Off	Off	On
RS422 Host to Translator Keypad to TDB	On	Off	On	On	On	On

SW2 Position	HOST Connector (P3) Signals	
	Pin 5	Pin 9
Left	5V	GND
Center	KP-IN	KP-OUT
Right	+12V	−12V

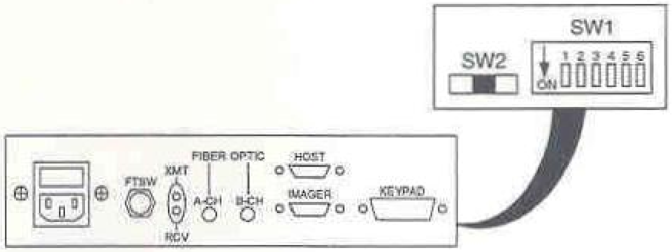
SW1
SW2
1 2 3 4 5 6
ON
FIBER OPTIC
HOST
XMT
FTSW
A-CH
B-CH
IMAGER
KEYPAD
RCV

Figure 2-27.

2-4-2. Copper TDB

Jumpers W1 and W4

Jumpers W1 and W4 configure J1 and J2 for RS422 or RS232 input. W1 configures J1 (Comm 0) and W4 configures J2 (Comm 1). Set the jumper to the left for RS232 and to the right for RS422.

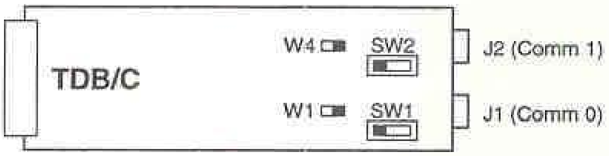

Figure 2-28.

Switches SW1 and SW2

Switches SW1 and SW2 control which signals are routed to pins 5 and 9 of J1 and J2. SW1 controls J1 (Comm 0) and SW2 controls J2 (Comm 1). Each switch can be placed in one of three positions, as described in the following table.

⚠ Caution

SW1 and SW2 must be set correctly. An incorrect setting could result in damage to the equipment connected to the TDB, and/or blow fuses on the TDB.

Position	Pin 5	Pin 9	Used For
Left	+5V	GND	UKEIB, Genesis Cable, 3M Fiber Optic Converter, other RS422 hosts.
Center	RTS	CTS	RS232 handshaking (RTS output, CTS input). Currently not used; may be used in the future for Toshiba host control.
Right	+12V	–12V	Siemens external fiber optic converter, 8700 Keypad.

2-4-3. VEIB

Pixel Clock Source

Two jumpers in the VEIB specify the pixel clock source. The clock may be external (provided by the source modality) or internal (generated by a Phase Lock Loop module installed in the VEIB). The jumpers are factory set, and should not need to be changed unless a PLL module is added or removed. Refer to Figure 2-29.

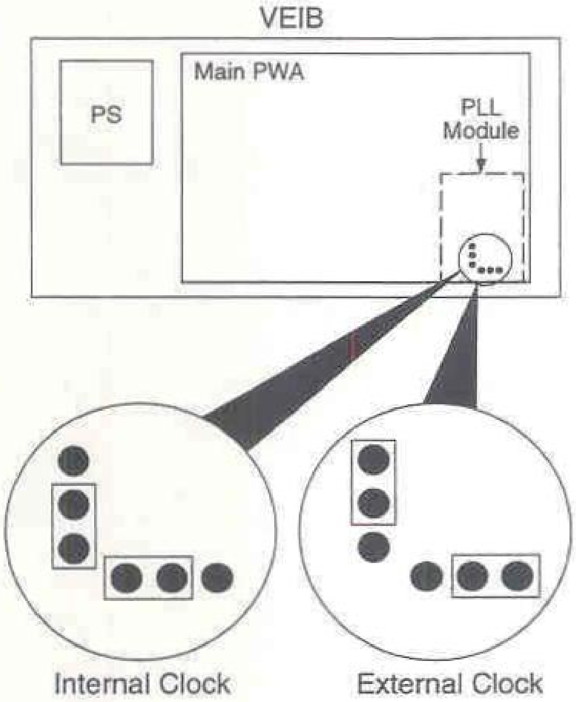
VEIB
PS
Main PWA
PLL Module
Internal Clock
External Clock

Figure 2-29.

2-4-4. VIB

Pixel Clock Source

Two jumpers on the VIB specify the pixel clock source. For an internal clock (generated by a Phase Lock Loop module installed on the VIB), set the jumpers to E1-E2 and E4-E5. For an external clock (provided by the source modality), set the jumpers to E2-E3 and E5-E6. The jumpers are factory set, and should not need to be changed unless a PLL module is added or removed. Refer to Figure 2-30.

Continuous Acquire Mode

When a jumper is connecting pins E7 and E8, the VIB operates in continuous acquire mode. This may be useful when attempting to examine the source video signal. However, for normal operation the two pins must not be connected (place the jumper block on a single pin; this is the factory setting).

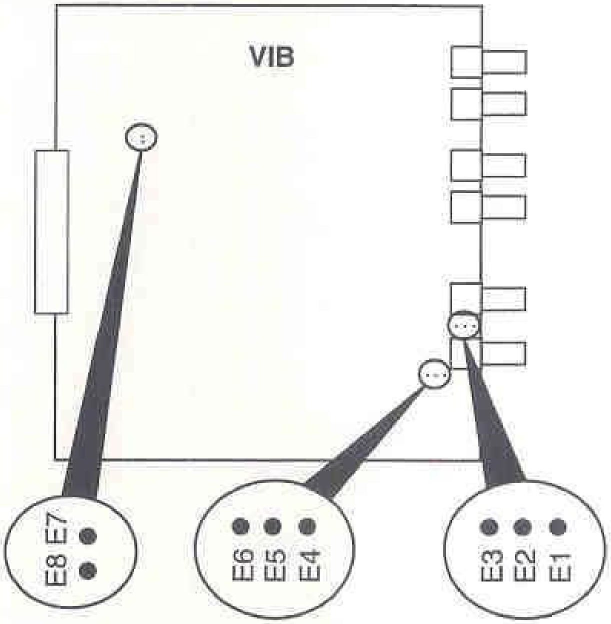

Figure 2-30.

2-4-5. DEIB

Transfer Clock Speed

Two jumpers in the DEIB specify either single (10 MHz) or dual (12.5 MHz) transfer clock speed.

When a DEIB is connected to an 8700, it must always be set for single (10 MHz) transfer clock speed. This is the factory default setting.

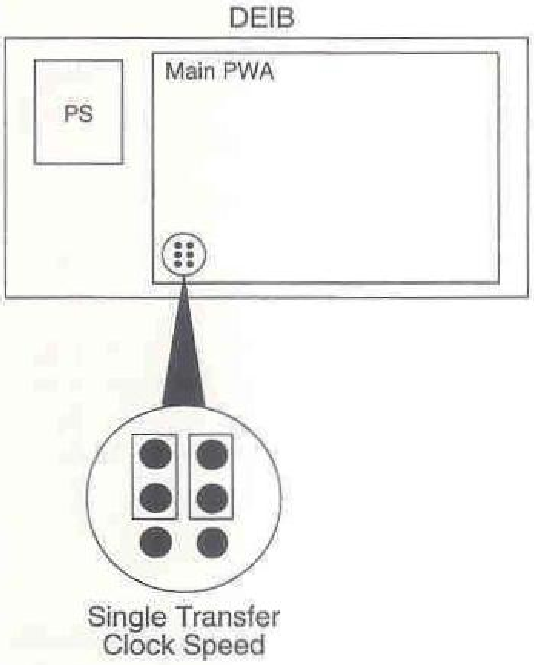
DEIB
PS
Main PWA
Single Transfer Clock Speed

Figure 2-31.

2-5. System Configuration

After all cables have been connected, and all switch and jumper settings have been verified, perform the following configuration procedures.

2-5-1. Power Up the 8700

> ⚠ **Caution**
>
> The 8700 can be configured to connect with 200, 220, or 240 VAC power sources. Before applying power, ensure that the 8700 is set for the voltage that most closely matches the AC line voltage. Refer to procedure 2-2.

1. Connect the power cord to the 8700 and the wall outlet.
2. Flip up the circuit breaker at the rear of the 8700.
3. Turn on the 8700.

2-5-2. Connect the MPC to the 8700

1. Connect a straight-through serial cable (9-pin female to 9-pin male) between the serial port of the MPC and the MPC connector at the rear of the 8700.
2. Install a hardlock key on the printer port of the MPC.
3. Turn on the MPC, and start the MPC for Windows program.

Note

If a "Subsystem Not Communicating" message is displayed, select Preferences from the Operations menu, then check the Direct Connect Baud and Com settings.

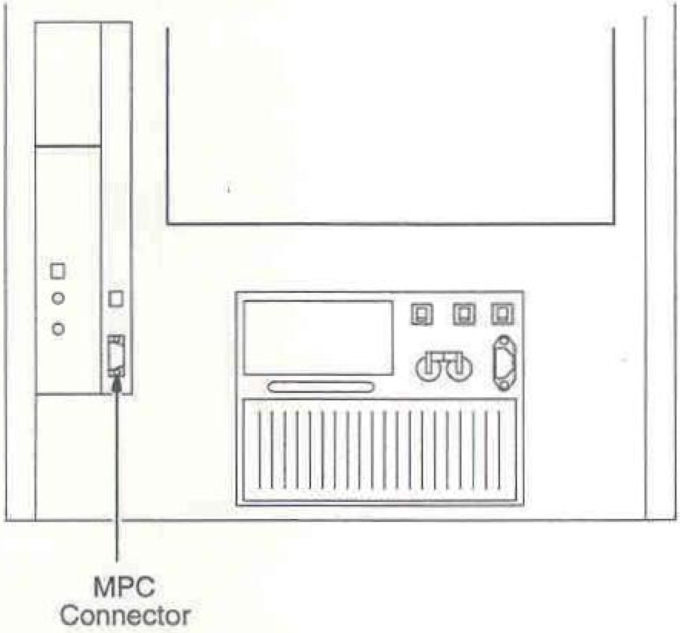

Figure 2-32.

Note

The MPC for Windows program is used to load configuration parameters into NVRAM within the various system components. Context sensitive help is available throughout the program via the F1 key. For example, for a description of a particular parameter, move the highlight to that parameter, then press F1. The MPC for Windows Help file will open and display the topic associated with the highlighted parameter.

2-5-3. Set the System Clock

1. Select Clock from the Utilities menu.
2. Enter the date and time in the Clock window, then select the OK button.

2-5-4. Load IMS Parameters

1. Select the IMS subsystem.
2. Select Output 0 Comm 0 from the component select dropdown list box (to the right of the subsystem buttons).
3. Select the Comm window display button.
4. Select the Printer Defaults button, then select the Save button.
5. Select the first user from the component select dropdown list box.

Note

Users are identified by slot/comm (e.g., Input 1 Comm 0) or modality name, depending on the User Display setting in the Preferences window.

6. If a script file is available for this user, select the Script window display button. Specify the script file name and location in the Select Script File window, then select the OK button. If a script file is not available, or the script file settings need to be modified, proceed to the next step.
7. Select the Comm window display button. Select the appropriate Defaults button, modify the parameter settings as needed for host control users, then select the Save button.
8. Select the Image window display button. Modify the parameter settings as needed, then select the Save button.
9. Select the Host window display button. Modify the parameter settings as needed, then select the Save button.
10. Select the System window display button. Modify the parameter settings as needed, then select the Save button.
11. If the system includes a second user, select the second user from the component select dropdown list box. Repeat Steps 6 through 10.
12. After all the IMS parameters have been loaded, power cycle the 8700.

2-5-5. Load SCB Parameters

1. Select the SCB subsystem.
2. Select the Config window display button. Modify the parameter settings as needed, then select the Save button.

2-5-6. Load AIQC Parameters

1. Select the AIQC subsystem.
2. Select the Config window display button. Select the Display Defaults button. Modify the parameter settings as needed, then select the Save button.

2-5-7. Load Keypad Parameters

1. Select the Keypad (KPD) subsystem.
2. Select the first keypad from the component select dropdown list box.
3. Select the Config window display button. Modify the parameter settings as needed, then select the Save button.

Note

The following step applies to HQ keypads only.

4. If custom formats are to be loaded for this keypad, select the Load window display button. Select the format (the letter designations correspond to the labels displayed on the keypad's custom format buttons). Specify the custom format file name and location in the Load Keypad Custom Format window, then select the OK button.
5. Repeat Steps 2 through 4 for each keypad listed in the component select dropdown list box.

2-5-8. Digital Modality Setup

Note

Load digital parameters from a script file whenever possible (refer to Step 6 of Procedure 2-5-4). If a script file is not available for the modality, enter parameters manually. To determine the correct settings, refer to the OEM specifications, contact the OEM site engineer, or contact the National Service Center.

1. Select the EIB subsystem.
2. Select the first DEIB or DIB user from the component select dropdown list box.
3. Select the Config window display button. Modify the parameter settings as needed, then select the Save button.

Note

When the Save button is selected, the digital parameters are loaded into the DEIB or DIB. If the save operation fails (when using a DEIB), check the fiber optic cables (use a flashlight), the DEIB power supply, and input module communications (use MPC for WIndows diagnostics).

4. Verify that the modality is generating an image.
5. Select the Acquire button.

Note

If the acquire fails, recheck the digital parameter settings. Modify the settings as needed. Save the new settings, then try to acquire again.

6. Select the Print button. Verify that the image is printed successfully.

2-5-9. Video Modality Setup

2-5-9-1. Inspect Signals from Modality

1. Verify that the modality is generating an image.
2. Inspect the video and pixel clock signals:
    a. **Check for two video modes.** Check with the OEM to determine if the modality can operate in two different modes that require different video parameters. Some OEMs have one set of video parameters for Live (Scan) mode and another set for Review (Off Tape) mode. Set up for one or the other.

    b. **Check for double termination.** Observe the host monitor while connecting the video cable to a powered up VEIB. If the monitor image improves or stays the same, there is no problem. If the monitor image suddenly goes bad (ghosting, blurring, faint, etc.), the video signal may already be terminated once, and connecting the VEIB causes a double termination problem. If so, resolve this problem before proceeding.

    c. **Check the pixel clock signal.** Connect the pixel clock cable to the oscilloscope (do not terminate the scope). The pixel clock signal must be above 0.5 volts peak to peak and must be stable. (A pixel clock filter may help eliminate glitches in the pixel clock, but it may also make it worse!) If the signal is okay, connect the pixel clock cable to the VEIB or VIB.

    d. **Avoid ground loops.** To prevent a possible ground loop, connect the VEIB power cord to the same power source as the OEM modality. If this cannot be done, and image noise problems are experienced later during image fine tuning, check for a ground loop problem as follows: Temporarily disconnect the ground wire from the VEIB. Run a ground wire from the VEIB to the OEM ground. If the noise goes away, there is a ground loop problem.

2-5-9-2. Enter Rough Video Parameters

Note

Load video parameters from a script file whenever possible (refer to Step 6 of Procedure 2-5-4). If a script file is not available for the modality, enter parameters manually. This requires that an oscilloscope be used to measure some parameters; other parameters are calculated based on these measurements. Refer to the video parameter help screens in MPC for Windows.

1. Select the EIB subsystem.
2. Select the first VEIB/VIB user from the component select dropdown list box.
3. Select the Config window display button. Enter rough parameter settings, then select the Save button.

Note

When the Save button is selected, the video parameters are loaded into the VEIB or VIB. If the save operation fails (when using a VEIB), check the fiber optic cables (use a flashlight), the VEIB power supply, and input module communications (use MPC for WIndows diagnostics).

4. Select the Acquire button.
    - If successful, proceed to Step 12.
    - If not successful, proceed to Step 5.
5. Temporarily set framing parameters to crop the image to a 100 line by 100 pixel square. (This is done to ensure that a vertical or horizontal sync pulse is not sampled; the parameters will be set for a full frame in Step 12.)
    - Set Image Lines to 100 and Horiz Active Pixels to 100.
    - Set Horizontal Delay and Vertical Delay to select this 100 x 100 square from the center of the image.

6. Connect the host video cable to the oscilloscope (use a T connector with a 75 ohm terminator attached). Measure the video signal from sync tip to maximum white level. If less than 1 volt, set the Double Gain parameter to 0.5 to 1.0. If more than 1 volt, set the Double Gain parameter to 1.0 to 2.0 volts.
7. Set the following parameters to midpoints as indicated:
   - Clock Delay to 6.
   - Fine Pixel Delay to 180.
   - Black Level to 100.
8. Select the Save button.
9. Verify that the Enable LED is on. This indicates that the parameter set has been loaded and the VEIB/VIB is in a ready state. Refer to Figure 2-33 (VEIB) and Figure 2-34 (VIB).

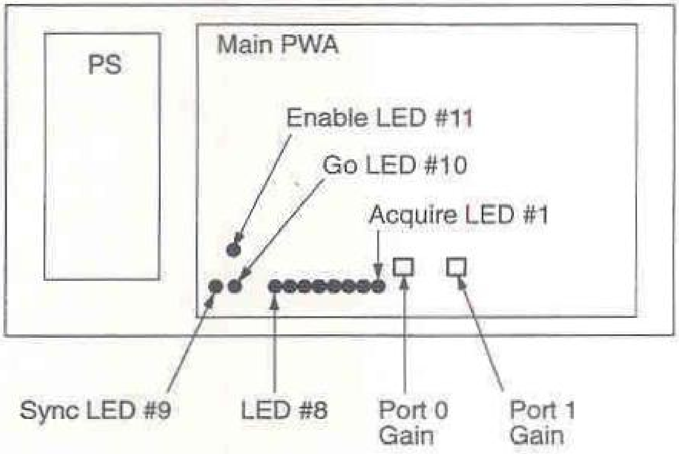
PS
Main PWA
Enable LED #11
Go LED #10
Acquire LED #1
Sync LED #9
LED #8
Port 0 Gain
Port 1 Gain

Figure 2-33.

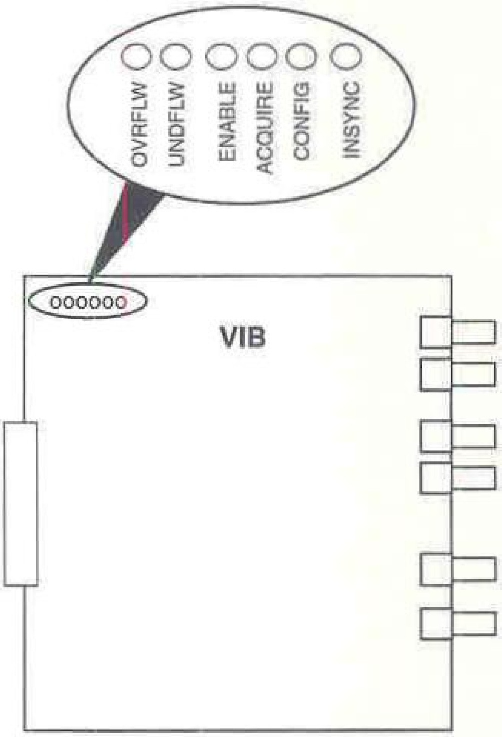

Figure 2-34.

Note

The following step refers to the gain pot in the VEIB. The VIB has no gain pots; it adjusts the gain automatically. With this exception, the following step applies to both the VEIB and the VIB.

10. Adjust the gain pot in the VEIB until the Sync LED turns on, then continue turning the pot in the same direction for at least three full turns. Refer to Figure 2-33.

    The Sync LED must stay on without flickering or acquires will fail! There must be at least three full turns of the pot during which the Sync LED remains on steadily. If not, check the video amplitude. The Double Gain parameter may need to be changed to the other setting.

    When the Sync LED is on, it indicates that the VEIB/VIB sees the video signal, and is successfully detecting horizontal and vertical sync pulses. The pixel clock has no effect on the state of the Sync LED.

If the Sync LED does not turn on when the gain pot is turned (and the Enable LED **is** on), either no video is present, or the video that is present is completely unrecognizable to the VEIB/VIB (the VEIB/VIB cannot detect horizontal or vertical sync pulses.) In this case:

- The video cable may be on the wrong port.
- The video signal amplitude may be less than 0.5 volts (this could have several causes: double or triple termination, bad cables, bad video, etc.).
- The video signal amplitude may be okay, but the signal may be bad.
- One or more of the following parameters may be set incorrectly: Double Gain, Black Level, and/or Source.

11. Try acquiring (be sure the Sync, Enable, and Acquire LEDs are all on).
    - If successful, proceed to Step 12.
    - If unsuccessful, try acquiring two or three more times. If still unsuccessful, reset the 8700 and the MPC, and try two or three more times. If still unsuccessful, double check Steps 1 through 10.
12. Adjust the following framing parameters to obtain the full frame (rough draft only; this will be done again during fine tuning):
    - Vertical Delay and Image Lines
    - Horizontal Delay and Horiz Active Pixels
13. Perform video fine tuning.

2-5-9-3. Fine Tune Video Parameters

Note

When printing images from **MPC**, the images are **replicated.** Replicate reproduces the image from the host exactly, without any smoothing. This is done so that any blurring or ghosting will be evident and not disguised by processing the image. When printing images from the **keypad**, the selected **interpolation** value (smooth to sharp) is used to process the image. This may make the image look better, but may also hide other problems. Therefore, it is best to print from MPC when performing fine tuning.

1. Display a SMPTE pattern on the OEM monitor. Be sure the SMPTE image is at OEM defined window and level. If a SMPTE pattern is not available, try using a customer image with all text removed and define the sampling area to include the grey scale. Another alternative is to window and level the customer image so that there are extreme blacks and whites across the whole image.
2. Select the Tune window display button.
3. Select the Gain/Black Level button in the Video Fine Tuning window.
4. An image is acquired, and then the Gain and Black Level Rectangle Selection window opens. Select the Retrieve button to download the acquired image to the MPC.

Note

Each time the Gain and Black Level Rectangle Selection window is opened, an image is acquired and the most recently downloaded (**not** the most recently acquired) image is displayed. This means that the window can be opened multiple times while configuring a modality without having to download an image each time. However, be sure to download an image for each modality, and be aware that the downloaded image may not match the most recently acquired image (for example, if the modality's screen saver kicks in after the image has been downloaded).

5. Examine the downloaded image:
   a. Identify an area that includes maximum blacks, but does not include any border (video blanking) area. **This is critical.** (The only area on a SMPTE pattern that contains maximum black is the 100% square; the other black bars are not maximum black.)
   b. Identify an area that includes maximum whites, but does not include any overwhite text. **This is critical.**
6. Click and drag to create a rectangle that surrounds the true black and true white areas identified in the previous step, then select the OK button.

Note

At this point, the IMS samples the video and passes the digital values to the MPC. The MPC adjusts the black level based on the sample and turns on the appropriate LED in the VEIB to indicate the gain (white level). This sampling and adjusting continues at approximately 4 second intervals.

7. The Gain and Black Level Fine Tune window opens, and displays the minimum and maximum digital values, along with the black level and (VIB only) the digital gain.

Note

If all the values are zero, the acquire has failed, and the cause should be investigated.

Note

The following step does not apply to the VIB.

8. At the VEIB, adjust the appropriate gain pot until LED 6 or LED 7 turns on. Remember that the state of the LEDs is updated at approximately 4 second intervals.
9. At the MPC, select the Close button in the Gain & Black Level Fine Tune window.

Note

Because this is a rough gain and black level adjustment, the digital values displayed at this point are not important. They will become important when the final adjustment is performed later in this procedure.

10. Select the Bad Clock Delay button in the Video Fine Tuning window. Select the OK button when the Successful Acquire and Successful Print messages are displayed.
11. The image is acquired using each of 16 different coarse clock delay settings. The 16 images are printed on one sheet of film. The coarse delay setting is printed above each image. Identify any images that exhibit vertical line pixel shifting. Ignore any other image problems at this time.
12. In the Bad Clock Delays window, select those images identified in the previous step, then select the OK button.
13. Select the Fine Pixel/Clock Delay button in the Video Fine Tuning window. Select the OK button when the Successful Acquire and Successful Print messages are displayed.
14. The image is acquired and printed using 16 different combinations of fine pixel and clock delays. The 16 images are printed in a 4:1 format on 4 sheets of film. The clock delay and fine pixel delay are printed above each image. Identify the single best image, then proceed to Step 18.

Note

Perform Steps 15 through 17 only if a single best image cannot be identified when the images are printed in a 4:1 format.

15. Select the Print 1-Up button in the Video Fine Tuning window.
16. Select an image to print in the Video Fine Tuning – Print Full Size window (image numbers are printed above each image on the 4:1 prints), then select the OK button. Select the OK button when the Successful Print message is displayed. Examine the image on the film.
17. Repeat Step 16 as needed. When the single best image has been identified, select the Cancel button in the Video Fine Tuning – Print Full Size window.

18. Select the Config window display button. Enter the clock delay and fine pixel delay settings that are printed above the previously identified image. Select the Save button.

19. Repeat Steps 2 through 7.

Note

The following step does not apply to the VIB.

20. At the VEIB, adjust the appropriate gain pot/wait/adjust/wait/etc. until LEDs 7 and 8 toggle. Wait for 3 or more flashes of the Sync LED between each adjustment; this allows the VEIB time to sample and adjust to the new gain level.

21. At the MPC, if the adjustment is correct, the following values will be displayed in the Gain & Black Level Fine Tune window:

    - For a VEIB, the maximum value will be below 511, and will be around 508 to 510. The minimum value will toggle between 0 and 4.
    - For a VIB, the maximum value will be below 1023, and should be 1016 for 8-bit pixels and 1022 for 12-bit pixels. The minimum value will be above 0, and should be 4 for 8-bit pixels and 1 for 12-bit pixels.

22. When the values listed in the previous step are displayed, select the Auto Adjust – Stop button to stop the continuous sampling of the video. If the values are close, but not right on, select the Auto Adjust – Once button to perform a single sample and adjust cycle (this can be repeated as required).

Note

The sampling circuitry in the VEIB/VIB is susceptible to video noise which can affect image Dmin values. The image Dmin of 3M DryView Film is extremely critical. To ensure that image Dmin will be acceptable, the following step will increase the gain slightly to clip the noise from the video signal. This will decrease image Dmin (and Dmax) slightly.

23. To ensure that image Dmin will be acceptable, increase the gain as follows:
    - For a VEIB, rotate the gain pot slightly counterclockwise, then select the Manual Adjust – Once button. The intent now is to produce a maximum value of 511.
    - For a VIB, add one to the displayed Digital Gain value, then select the Manual Adjust – Once button. The intent now is to produce a maximum value of 1023.
24. Increasing the gain decreases Dmax as well as Dmin. To offset the gain increase, increase the displayed Black Level value by one, then select the Manual Adjust – Once button.
25. Select the Close button to accept the displayed values.
26. Acquire and print a SMPTE test pattern using the lowest available contrast setting (usually contrast #1). Check the black and white levels on the film. If the levels are set correctly, the 95% and 5% patches on the film will be equally visible.

    If a SMPTE pattern is not available, use a customer image and check the grey scale steps. Again, using the lowest available contrast setting, inspect the film for visual distinction of the first two and last two steps of the grey scale. (Note: A low contrast setting produces low contrast in the middle of the scale and high contrast at the ends of the scale.) Step 2 should not blend into step 1, and step 15 should not blend into step 16. If the OEM monitor is adjusted properly (refer to Procedure 2-5-9-5), its grey scale can be used for comparison purposes.

If the VEIB/VIB is set up CORRECTLY: What is normally seen (using a contrast test) is that the contrast test #1 Dmax (0% square) is lighter than a dark border and Dmin (100% square) is equal to or slightly darker than a clear border. It is not until later contrast tests that image Dmax and Dmin equal film Dmax and Dmin. This is acceptable, gives good quality images, and results in the 95% and 5% patches on a SMPTE test film being equally visible. If desired, the image Dmax can be forced to match the border Dmax; there are two ways to accomplish this:

- In the Image Parameters window, set the Match Border parameter to Yes.
- Increase the Black Level value by one or two digits. This will darken up the image Dmax, and will also darken up the image Dmin slightly. Do not go past the point of just matching image Dmax to border Dmax or the 5% patch will start to disappear.

If the VEIB/VIB is set up INCORRECTLY: Using contrast #1, either the 95% or 5% patch will be gone or faint. If using a customer image, step 2 of the grey scale will blend with or be only faintly darker than step 1, or step 15 will blend with or be only faintly lighter than step 16. (See Step 27 of this procedure for possible solutions.)

The other possible incorrect setup of the VEIB/VIB is that image Dmax is significantly lighter than film Dmax or that image Dmin is significantly darker than film Dmin. Using a contrast test, this can be seen by the fact that image Dmax and Dmin do not match film Dmax and Dmin until the last few contrast levels, or they never reach film Dmax and Dmin. (See Step 27 of this procedure for possible solutions.)

If the VEIB is set up PERFECTLY: All of the following will be true (with Match Border set to Yes):

- Contrast #1 Dmax and Dmin will match the border Dmax and Dmin.
- Increasing the final Black Level setting by one will make the contrast #1 Dmin slightly darker than a clear border.
- Decreasing the final Black Level setting by one will make the contrast #1 Dmax slightly lighter than a dark border.

This would be the perfect situation; however, in most cases, the VEIB/VIB does not seek black and white level this accurately.

27. If the black or white level is unacceptable, try any of the following:
    - Assuming that fine tuning has been done, try selecting a different sampling area (use different row and column settings) when performing the MPC gain adjustment.
    - Try a different image (see Step 1 of this procedure).
    - The Black Level setting can be increased by one or two digits to darken up the image Dmax. This will also darken up the image Dmin slightly.
    - If still having problems, contact TAC, a PST member, or the local video expert.
28. Make final adjustments to framing parameters to obtain the full frame. The preceding fine tuning steps may have shifted the horizontal delay so that a pixel is lost on the right or left side of the image. To check for this, print a film with clear borders (change the Border setting in the Image Parameters window to 4095). View the image. If a pixel is missing from the left or right side, add or subtract one pixel from the Horizontal Delay setting. **Be sure to change the Border setting back to 0 when fine tuning is complete.**
29. Proceed to Procedure 2-5-9-4.

2-5-9-4. Set Customer Preferences

When performing the following procedure, note that the method of setting customer preferences varies depending on the control source.

- For 8700 Keypad and host control users, density and contrast are set at the local panel of the 8700. Refer to the 8700 Operator's Guide for details.
- For 8700 Keypad and host control users, smooth/sharp image processing is set via MPC, based on interpolation settings. Refer to the MPC for Windows Help file for details.
- For HQ Keypad users, density, contrast, and smooth/sharp are all set at the keypad. Refer to the 8700 Operator's Guide for details.

1. Have the customer select a typical image that contains the range of contrasts they will be looking for.
2. Acquire the image and print a contrast test.
3. If everything looks too light or too dark, adjust the density setting. If the density setting looks okay, have the customer select a contrast setting.
4. If the customer finds the image unacceptable at any combination of density and contrast levels, it is possible that the gain/black level adjustment needs to be redone using a different image, or the OEM monitor may be misadjusted (refer to Procedure 2-5-9-5).
5. Have the customer select smooth or sharp image processing. If neither smooth nor sharp is acceptable to the customer, the interpolation settings may need to be changed. Refer to the MPC for Windows Help file for details on how to change interpolation settings.

2-5-9-5. OEM Monitor Adjustment

If the customer likes the images there is no need to adjust the OEM monitor even though it may be slightly off. However, if the customer is unable to get an acceptable contrast on the images, it may be necessary to make the following checks and/or adjustments.

Theory

The OEM's video generator board outputs a video signal to the OEM monitor. This same video signal is sent to the VEIB/VIB. The window and level controls adjust this video signal, which affects both the image displayed on the OEM monitor and the image printed on the film. If the monitor's brightness and contrast are out of adjustment, the customer will compensate by adjusting the window and level controls until the image looks good on the monitor. The result of this is that the image on the film and the image on the monitor do not match. Therefore, it is important that after the brightness and contrast have been set correctly, the customer does not turn the brightness and contrast knobs. (Over time the monitor will tend to drift, and the brightness and contrast may have to be adjusted by the OEM.)

Check

With the SMPTE pattern at OEM defined window and level values, the 5% patches (both black and white) should be visible, and should have equal contrast to the enveloping 100% and 0% boxes around them. If the 5% patches are not visible, or are not equally visible, the OEM monitor should be adjusted.

- Ask the OEM to adjust the monitor.
- Be there when the OEM adjusts the monitor, and ensure that the ambient lighting is the same as the normal lighting the customer uses when filming.

Adjustment

1. Adjust the white first. Looking at the text, turn the OEM contrast knob until the whites just start to smear. Then back off the contrast just to the threshold of smearing. The 95%/100% patch in the SMPTE should now be visible.
2. Adjust the black. Turn the brightness knob until the image starts to fill in. Continue until the black in the image starts to turn grey. At this point, the 5%/0% patch should be visible. Back off the brightness until there is an equal balance in the visual ratio of 0% to 5% as 100% to 95%. **These two patches are the key.**

8700 **Section 3 – Adjustments – Table of Contents**

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3-1. Processor Temperature

Specification

There are three temperature zones in the processor. Viewed from the front of the machine, Zone 1 is at the left end, Zone 2 is in the center, and Zone 3 is at the right end. The temperature measured in all three zones must be in the range of 122.2° – 122.8° C (252° – 253° F).

Note

This procedure should be performed whenever the processor drum, rotating processor board (RPB), processor communication board (PCB), or system controller board (SCB) is replaced, or if drum temperatures are suspected of causing image quality problems.

Special Tools

Temperature meter with probe and block
Maintenance Personal Computer (MPC)
MPC for Windows software package

Note

A probe with a bar type element must be used to perform this procedure. Probes with circular type elements will not provide accurate readings.

Note

The temperature meter and probe must be calibrated together as a pair at least once per year. If the probe breaks, a new probe and the meter must be sent in for calibration. Refer to procedure 5-2 for details.

Note

The temperature meter must be at room temperature when performing this procedure. If the meter has been brought in from a hot or cold vehicle, allow it to acclimate to room temperature before use.

Measurement Setup

1. Raise the top cover of the 8700.
2. Open the processor cover. Verify that the processor rollers are clean and free of deposits.

> **⚠ Caution**
>
> Deposits on the processor rollers could be knocked loose by the temperature probe, resulting in damage to the surface of the drum. If necessary, clean the processor before continuing with this procedure.

3. Close the processor cover.
4. Remove the four screws that secure the top cover of the processor clamshell. Do not remove the cover yet. Refer to Figure 3-1.
5. Remove the right side panel (4-1-3) from the 8700, and pull out the service interlock switch.
6. Close the top cover of the 8700.

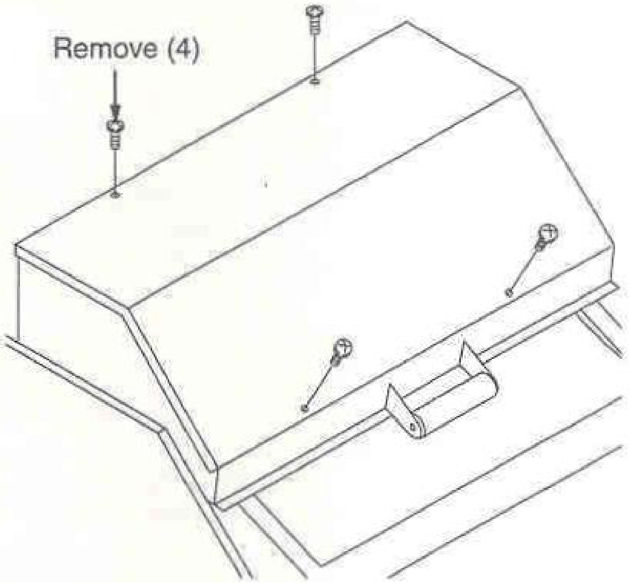

Figure 3-1.

7. Power up the 8700.
8. Install the block on the probe as shown in Figure 3-2. Clean the probe with alcohol.

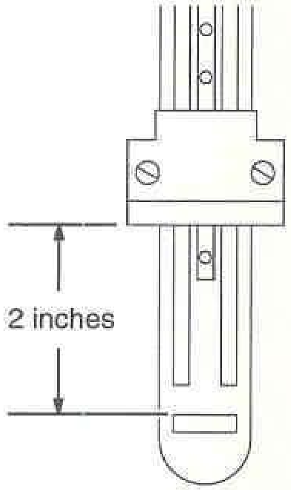

Figure 3-2.

9. Set the meter to display temperatures in Celsius.

Note

Celsius temperatures are displayed to one decimal point of accuracy. Fahrenheit temperatures are displayed as whole numbers. Therefore, the Celsius readings provide a more accurate measurement.

Measurement Procedure

1. When "Ready" is displayed on the the local panel, open the top cover of the 8700.
2. Remove the top cover from the processor clamshell.

⚠ Caution

⚠ Hot Surface ⚠

The surfaces around the slot in the top of the processor are hot, and hot air exits through the slot. Do not touch the surfaces around the slot, and do not hold the block above the slot for prolonged periods of time.

3. Check the Zone 2 temperature. Insert the probe in the center of the slot in the top of the processor. Refer to Figure 3-3.

   Note

   When looking straight down into the slot in the top of the processor, three rollers are visible. Insert the probe between the two rollers closest to the front of the machine. As the rollers turn they will draw the probe in toward the drum.

4. While observing the meter, grasp the block and slowly pull the probe out of the slot (approximately 1/4 inch). Slide the probe in and out several more times until the maximum temperature point has been located. The maximum temperature is displayed when the probe thermo pad is directly under a roller nip (it may be possible to feel the thermo pad move in and out from under the roller nip).

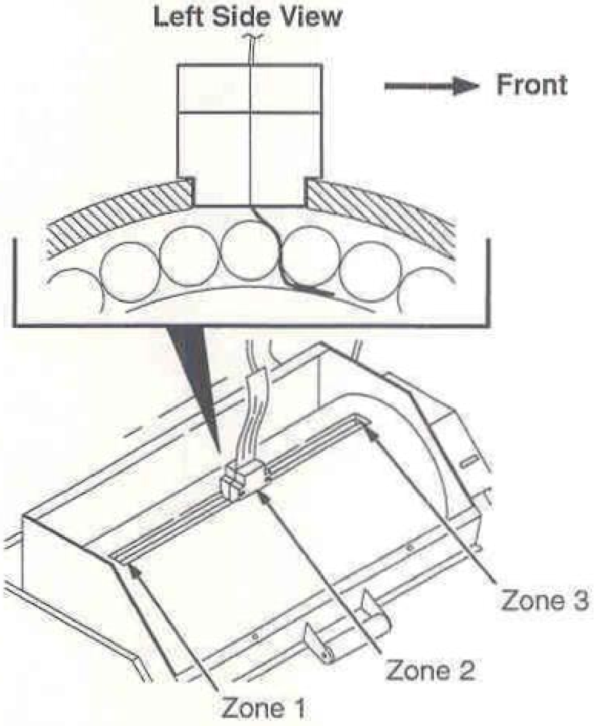

Figure 3-3.

5. With the probe positioned at the maximum temperature point, observe the meter. The reading will vary slightly, and within approximately one minute should go through a high/low cycle. For example, the high reading may be 122.7° C, and the low reading may be 122.3° C. Both the high reading and the low reading must be in the range of 122.2° – 122.8° C. Note the readings.
6. Remove and clean the probe.

> ⚠ **Caution**
>
> To prevent damage to the surface of the processor drum, remove and clean the probe after taking each temperature reading.

7. Check the Zone 1 temperature. Insert the probe at the far left end of the slot, between the two rollers closest to the front of the machine. Repeat steps 4 through 6.
8. Check the Zone 3 temperature. Insert the probe at the far right end of the slot, between the two rollers closest to the front of the machine. Repeat steps 4 through 6.
9. If all of the temperatures are within specification, replace and secure the processor clamshell top cover. If any of the temperatures is out of specification, replace (but do not secure) the processor clamshell top cover, then perform the following adjustment procedure.

Adjustment Procedure

> ⚠ **Caution**
>
> To prevent damage to the surface of the processor drum, do not leave the probe installed while performing an adjustment, or while waiting for the processor temperatures to stabilize.

1. Connect the MPC to the MPC port on the rear of the 8700.

2. Power up the MPC and start the MPC for Windows program.
3. Do either of the following to select the processor subsystem:
   - Click on the PROC button.
   - Open the Operations menu, and select Subsystem→Processor.
4. Select the Calib button to display the Processor Calibration window.
5. Adjust the temperatures by clicking on the appropriate arrows or by entering positive or negative values (representing click counts) in the numeric fields below the arrows. For example, if the Zone 1 temperature is too low, click on the Zone 1 up arrow, or enter a positive value in the related numeric field. If the Zone 3 temperature is too high, click on the Zone 3 down arrow, or enter a negative value in the related numeric field. Each click produces a change of approximately .06° C.

Note

The adjustment of one zone will affect the temperature of the adjacent zone. Zone 2 will affect Zone 1 and Zone 3 more than Zone 1 or Zone 3 will affect Zone 2. In general, if Zone 2 and either outer zone are out of specification, adjust Zone 2 first. However, if there is a difference of more than 2.0° C between Zone 2 and the outer zone(s), adjust the outer zone(s) first, then Zone 2, then the outer zone(s) again.

6. Wait five minutes for temperatures to stabilize, then repeat the measurement procedure.

Note

For adjustments of more than 2.0° C, the processor may require more than five minutes to stabilize temperatures.

7. Once all zones are within specification, wait five more minutes, then repeat the measurement procedure to verify the adjustment.
8. Select the Save button to write the new settings into NVRAM.

3-2. Processor Drum Stripper

Specification

With the processor at operating temperature, there must be a gap of .009 ± .001 inches between the processor drum and the stripper, measured at the edges of the film path.

Note

> The stripper mechanism expands when heated. To ensure accuracy, the following measurement must be performed with the processor at operating temperature.

Measurement

1. Raise the top cover of the 8700.
2. Grasp the handle on the front of the processor/exit assembly and pull the assembly out to its extended position.
3. Open the processor cover.

⚠ Caution
⚠ **Hot Surface** ⚠
The surface of the processor drum is hot. Take care when checking the gap.

⚠ Caution
The feeler gauge can damage the surface of the drum. Take care when checking the gap.

4. Use a .009 inch feeler gauge to check the gap between the drum and the stripper. Check the gap at the edges of the film path, approximately 1.5 inches in from each end of the stripper blade. Refer to Figure 3-4. If the gap is set incorrectly, perform the following adjustment procedure.

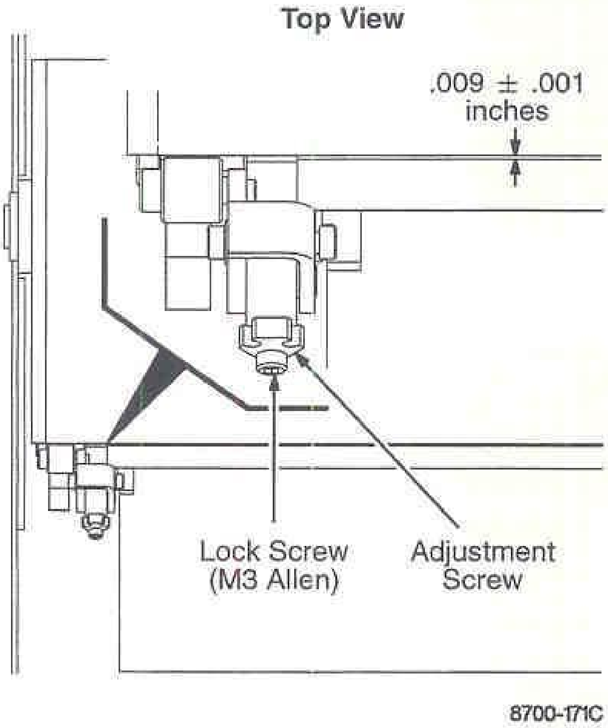
Top View
.009 ± .001 inches
Lock Screw (M3 Allen)
Adjustment Screw
8700-171C

Figure 3-4.

Adjustment

1. Remove the lock screws (M3 Allen) at each end of the stripper.
2. Rotate the adjustment screws at each end of the stripper as required to create a gap of .009 ± .001 inches. Rotate counterclockwise to decrease the gap, clockwise to increase the gap.
3. There are three locking slots in each adjustment screw. Determine which locking slot is closest to the hole for the lock screw, then rotate the adjustment screw so this slot lines up with the hole. Install and tighten the lock screws.
4. Recheck the measurement.

3-3. Densitometer Calibration

Specification

The A/D Out (Gain) value must be 1640 ± 10, and the A/D Out (Offset) value must be 20 ± 2.

Note

> This procedure should be performed whenever a new densitometer is installed. It should also be performed if the densitometer is suspected of causing AIQC problems; however, be aware that the densitometer may function perfectly even when not adjusted to specification (i.e., calibrating a densitometer that is out of specification will not necessarily solve an AIQC problem).

Special Tools

Maintenance Personal Computer (MPC)
MPC for Windows software package

Measurement

1. Connect the MPC to the MPC port on the rear of the 8700.
2. Power up the MPC and start the MPC for Windows program.
3. Open the Operations menu and select Diagnostics.
4. Do either of the following to select the processor subsystem:
   - Click on the PROC button.
   - Open the Operations menu, and select Subsystem→Processor.
5. Select the Densi button to display the Densitometer Test window.
6. Check the values displayed for A/D Out (Gain) and A/D Out (Offset). If either value is out of specification, perform the adjustment procedure on the following page.

Adjustment

1. Raise the top cover of the 8700.
2. Peel back the calibration label that covers the potentiometer access holes on the top side of the densitometer.
3. Adjust the gain and offset potentiometers as required to bring both readings within specification.

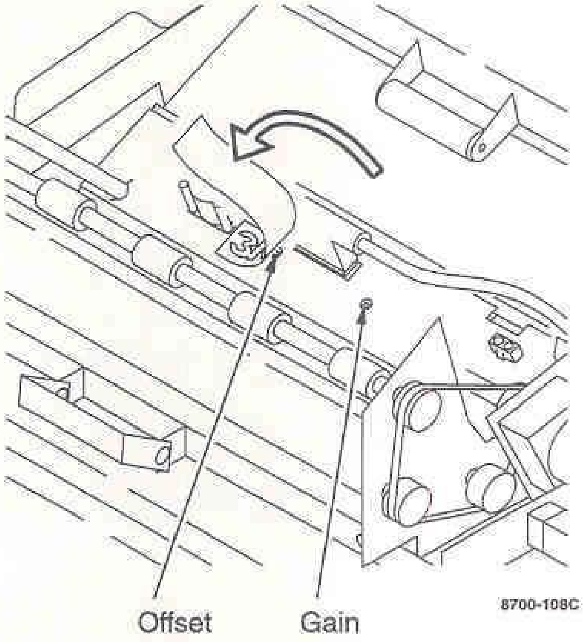

Figure 3-5.

3-4. Density Patch Offset

Specification

The top edge of the density patch must be located 7.0 ± 0.5 mm from the top edge of the film.

Special Tools

Small flat-blade insulated screwdriver

Measurement

1. Power up the imager and wait for it to warm up to operating temperature.
2. Initiate a density test from the local panel.
3. Measure the distance from the top edge of the test print to the top edge of the density patch. If it is not within specification, perform the following adjustment procedure.

Adjustment

1. Remove the supply cartridge.

> **⚠ WARNING**
>
> When the power cord is plugged in, hazardous voltages are present in some areas of the 8700. These voltages can cause severe injury or death.

2. Flip down the circuit breaker on the rear of the 8700, then unplug the power cord.
3. Remove the front panel (4-1-1).

4. Locate the offset potentiometer access hole on the front of the optics module. (The offset and gain pots are mounted on the Y-galvo driver board, approximately 1.5 inches behind the front cover of the optics module.)

Optics Module

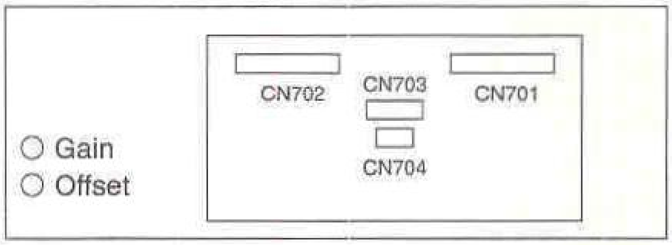

Figure 3-6.

⚠ Caution

To avoid damage to the Y-galvo driver board, wear an anti-static wrist strap when adjusting the offset potentiometer. Take care not to touch any other components on the Y-galvo driver board.

5. Use an insulated screwdriver to adjust the offset pot. A 1/4 turn of the pot moves the density patch approximately 0.5 mm. Turn the pot clockwise to increase the distance between the top of the film and the top of the density patch; turn the pot counterclockwise to decrease the distance.

Note

Do not adjust the gain pot. The gain pot affects the image size in the Y-direction.

6. Install the front panel and the supply cartridge.
7. Power up the imager and repeat the measurement procedure.

3-5. Exit Transport Sensor Actuator

Theory of Operation

The sensor actuator is mounted on a shaft. A spring is wrapped around the other end of the shaft. As film exits the imager, it pushes on the spring, which rotates the shaft and actuator slightly counterclockwise, unblocking the sensor. Once the film has cleared the spring, the spring drops back into the slot in the exit guide, which rotates the shaft and actuator slightly clockwise, blocking the sensor.

Specification

With the spring resting in the slot in the exit guide, the left edge of the sensor actuator must line up with the left edge of the sensor.

Adjustment

Rotate the actuator **counterclockwise** as required to line up the left edges of the sensor and actuator. The actuator can be rotated a full 360°; the spring will slip on the shaft.

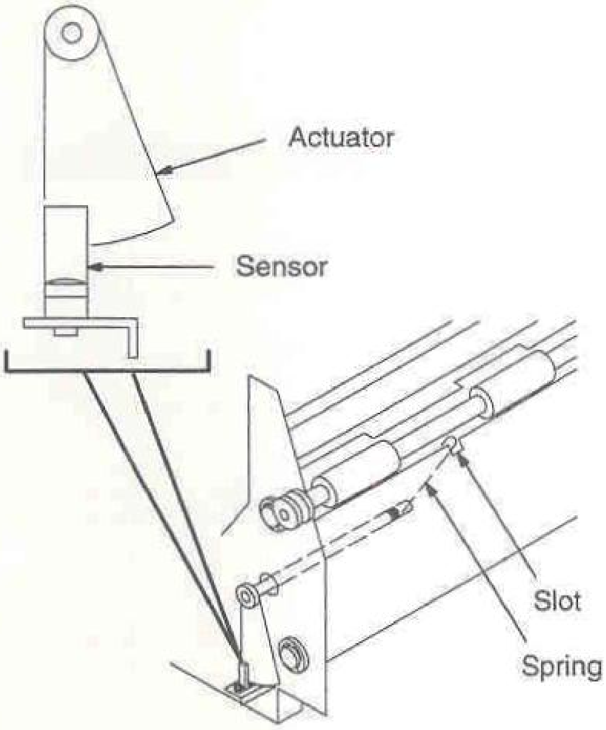

Figure 3-7.

3-6. Local Panel Display Contrast and Buzzer Volume

⚠ WARNING

When the power cord is plugged in, hazardous voltages are present in some areas of the 8700. These voltages can cause severe injury or death.

1. Raise the top cover of the 8700.
2. Locate the potentiometer access holes in the local panel housing.
3. Turn the contrast potentiometer clockwise to darken the display, counterclockwise to lighten the display.
4. Turn the volume potentiometer clockwise to increase the buzzer volume, counterclockwise to decrease the volume.

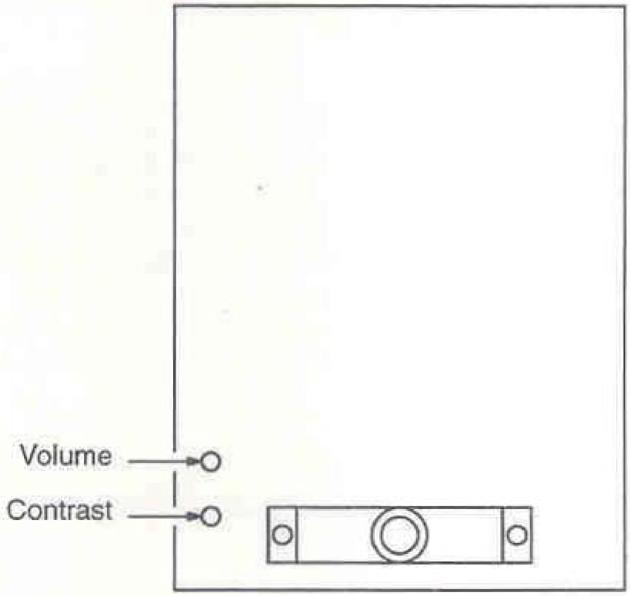

Figure 3-8.

3-7. Power Supply Voltages

3-7-1. +5, ±17, and +24 VDC Power Supply (PS901)

⚠ WARNING

When the power cord is plugged in, hazardous voltages are present in some areas of the 8700. These voltages can cause severe injury or death.

Specification

PS901 must output the following DC voltages:

+5.1 ± 0.1 VDC
+17.3 ± 0.3 VDC
–17.3 ± 0.3 VDC
+24.2 ± 0.4 VDC

Special Tools

Digital Voltmeter

Measurement

1. Remove the right side panel (4-1-3).
2. Remove the electronics enclosure cover (4-1-4).
3. To gain access to the Machine Interface Board (MIB), swing out the panel that holds the memory boards.
4. Check the voltages by connecting a voltmeter to the appropriate test points on the MIB. The table below lists the test points; Figure 3-9 on the following page shows the test point locations. If any of the voltages are out of specification, perform the adjustment procedure.

MIB Test Points	
TP5H1 (+5V)	TP7G1 (LOGIC GND)
TP5I8 (+17V) TP6I1 (–17V)	TP5I9 (AGND)
TP7K1 (+24V)	TP6K1 (GND)

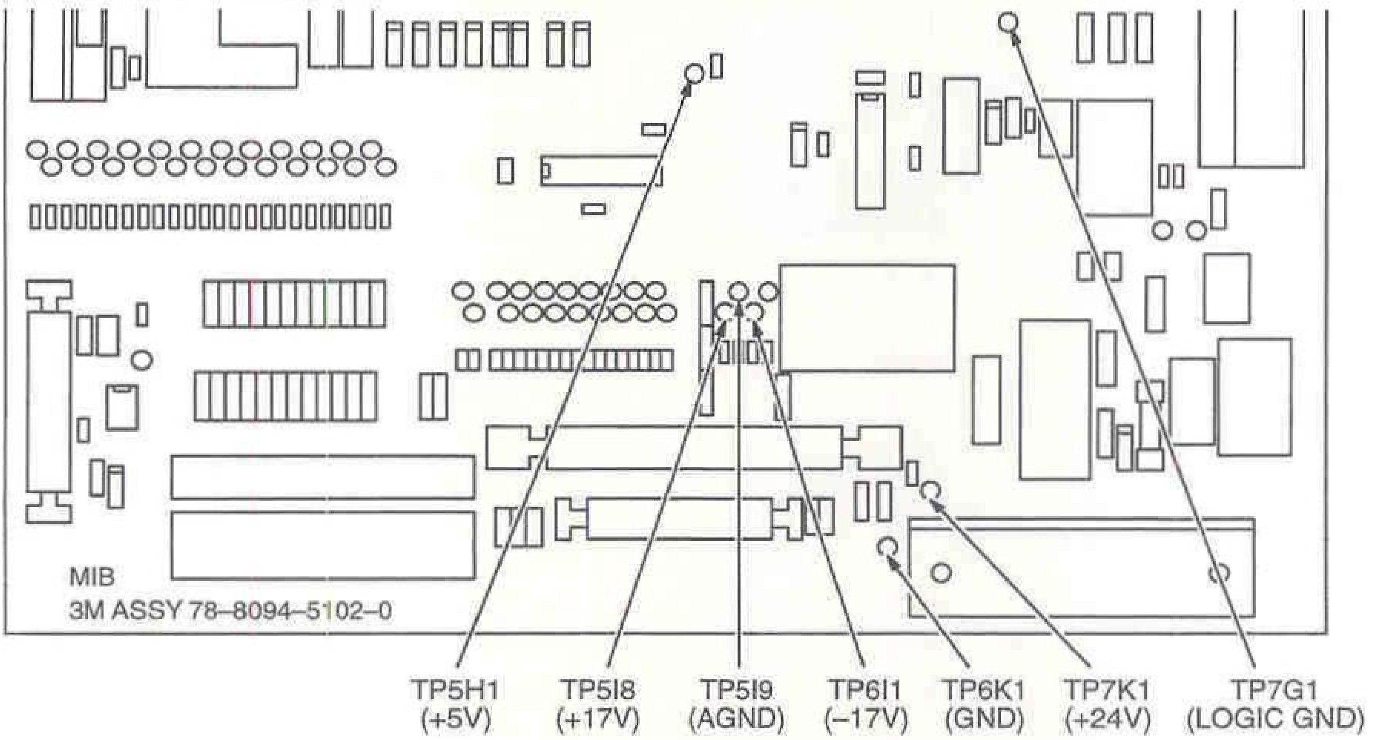
MIB
3M ASSY 78–8094–5102–0
TP5H1 (+5V)
TP5I8 (+17V)
TP5I9 (AGND)
TP6I1 (–17V)
TP6K1 (GND)
TP7K1 (+24V)
TP7G1 (LOGIC GND)

Figure 3-9.

Adjustment

1. Remove the rear panel (4-1-2).
2. Loosen the two screws that secure the power module.
3. Slide the power module out of the imager. Do not disconnect the power module cables.
4. Remove the plastic plugs covering the adjustment potentiometers.
5. Rotate the appropriate output adjustment potentiometer(s) as required. Refer to Figure 3-10.

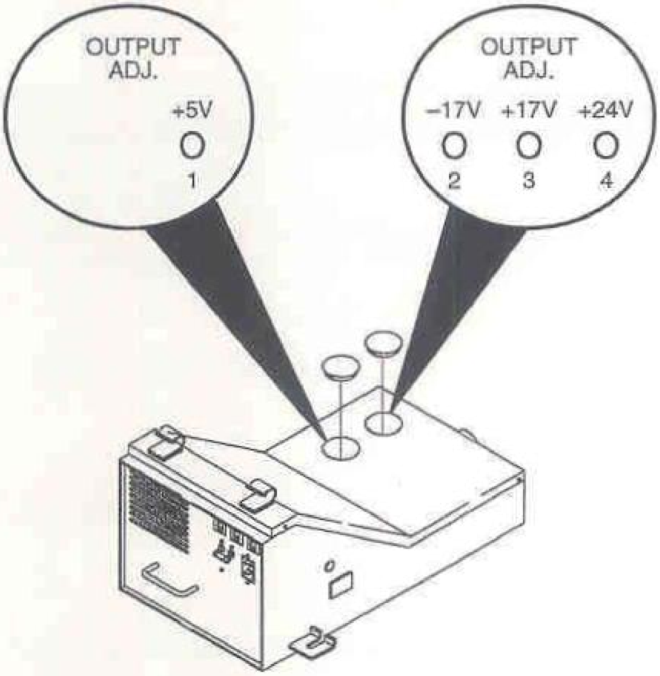

Figure 3-10.

3-7-2. –5.2 VDC Power Supply (PS902)

⚠ WARNING

When the power cord is plugged in, hazardous voltages are present in some areas of the 8700. These voltages can cause severe injury or death.

Specification

PS902 must output –5.2 ± 0.2 VDC for the VIB.

Special Tools

Digital Voltmeter

Measurement

1. Remove the right side panel (4-1-3).
2. Remove the electronics enclosure cover (4-1-4).
3. Connect a voltmeter to TP31 and TPGND2 in the lower right corner of the VIB. Refer to Figure 3-11. If the voltage is out of specification, perform the adjustment procedure.

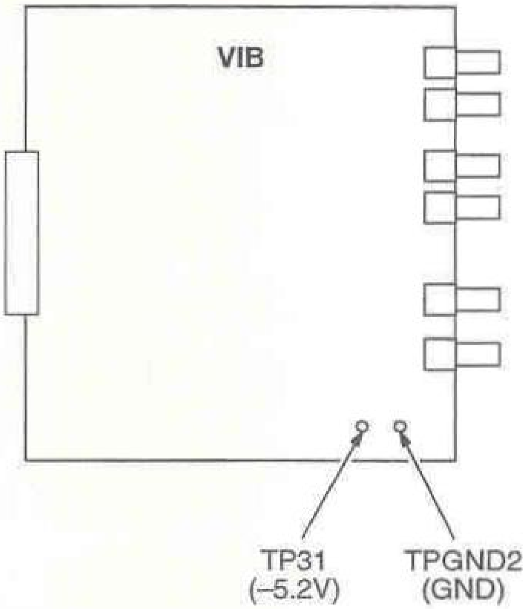

Figure 3-11.

Adjustment

1. Remove the rear panel (4-1-2).
2. Loosen the two screws that secure the power module.
3. Slide the power module out of the imager. Do not disconnect the power module cables.
4. Remove the power module cover. Refer to Figure 3-12.
5. Rotate potentiometer VR51 (next to the terminal block on PS902) as required.

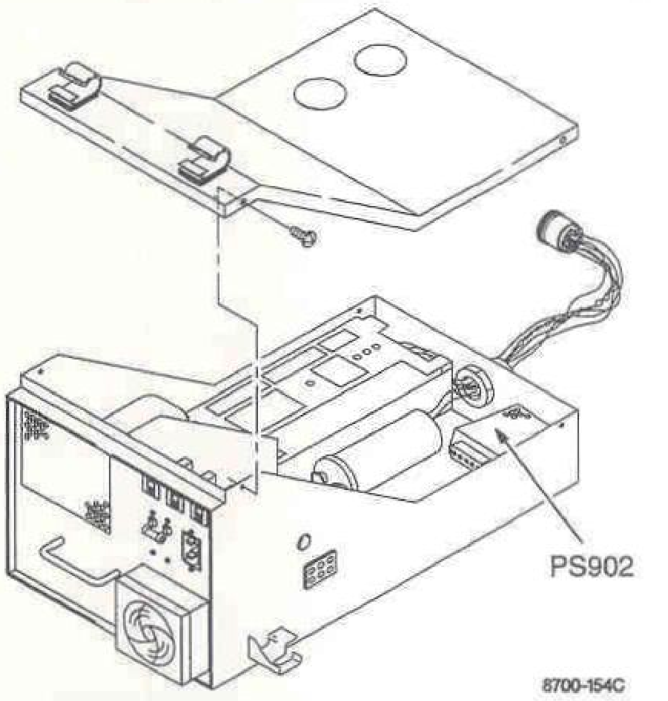

Figure 3-12.

3-8. Multifeed Board (MFB) Actuator

Note

This procedure should only be performed if the MFB or associated hardware has been replaced.

Special Tools

Maintenance Personal Computer (MPC)
MPC for Windows software package

Measurement

1. Connect the MPC to the MPC port on the rear of the 8700.
2. Power up the MPC and start the MPC for Windows program.
3. Open the Operations menu and select Diagnostics.
4. Click on the SCB button, or open the Operations menu and select Subsystem→SCB.
5. Select the Cmd button to display the Command window.
6. Type **show adc=9** in the Command field, then press Enter or click OK.
7. Calculate the average of the comma-separated numbers displayed in the Response field.

Note

The response actually includes 30 numbers; however, the average of the first 8 numbers is sufficient for this purpose. (The numbers should be in the range of 1000 to 3000.)

8. Type **show adc=10** in the Command field, then press Enter or click OK.
9. Calculate the average of the comma-separated numbers displayed in the Response field.
10. If the difference between the average values calculated in steps 7 and 9 is greater than 200, perform the following adjustment procedure. If the difference is less than 200, perform the pickup arm height calibration (3-9).

Adjustment

⚠ WARNING

When the power cord is plugged in, hazardous voltages are present in some areas of the 8700. These voltages can cause severe injury or death.

Note

When performing the following procedure, move the actuator in small increments. The adjustment is very sensitive.

1. Remove the supply cartridge.
2. Open the left side door.
3. Squeeze the handle on the transport assembly and pull the assembly out to its extended position.
4. Use a long Phillips head screwdriver to loosen the screw that secures the actuator for the sensor on the MFB.
5. Move the actuator slightly and retighten the screw. (Move the actuator **up** if Channel 10 is higher. Move it **down** if Channel 9 is higher.)
6. Repeat the measurement and adjustment procedures as required.
7. Slide the transport back into place, close the left side door, and install the supply cartridge.
8. Perform the pickup arm height calibration (3-9).

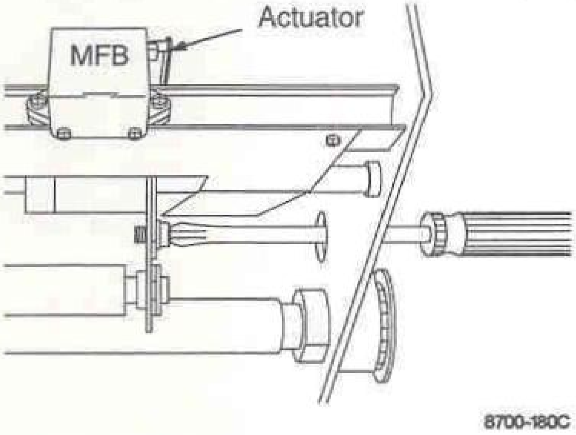

Figure 3-13.

3-9. Pickup Arm Height Calibration

Note

This procedure should be performed after the multifeed board (MFB) actuator adjustment (3-8) has been performed, or after the system control board (SCB) has been replaced.

Special Tools

Maintenance Personal Computer (MPC)
MPC for Windows software package

Adjustment

1. Connect the MPC to the MPC port on the rear of the 8700.
2. Power up the MPC and start the MPC for Windows program.
3. Click on the SCB button, or open the Operations menu and select Subsystem→SCB.
4. Select the Config button to display the 8700 Imager Setup window.
5. Select the Pickup Arm Height button.
6. A confirmation window is displayed. Select the Yes button to initiate the calibration.

Note

For a detailed description of the events that occur during the calibration process, refer to the MPC for Windows Help file.

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4-1. Covers and Panels

4-1-1. Front Panel

1. Remove the supply cartridge.

⚠ WARNING

When the power cord is plugged in, hazardous voltages are present in some areas of the 8700. These voltages can cause severe injury or death.

2. Flip down the circuit breaker on the rear of the 8700, then unplug the power cord.

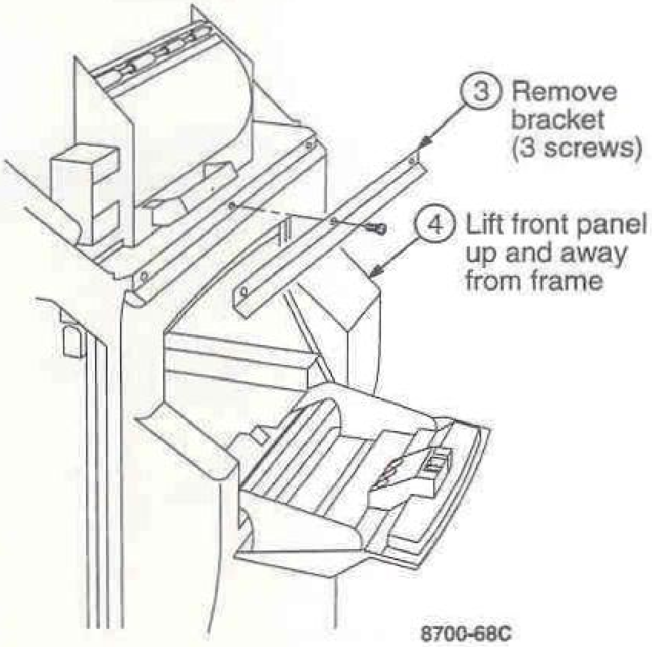

③ Remove bracket (3 screws)
④ Lift front panel up and away from frame
8700-68C

Figure 4-1.

4-1-2. Rear Panel

1. Remove the supply cartridge.

⚠ WARNING

When the power cord is plugged in, hazardous voltages are present in some areas of the 8700. These voltages can cause severe injury or death.

2. Flip down the circuit breaker on the rear of the 8700, then unplug the power cord.
3. Raise the top cover of the 8700.
4. Grasp the handle on the front of the processor/exit assembly and pull the assembly out to its extended position. Locate the connector on the inside rear wall of the imager (behind the processor).

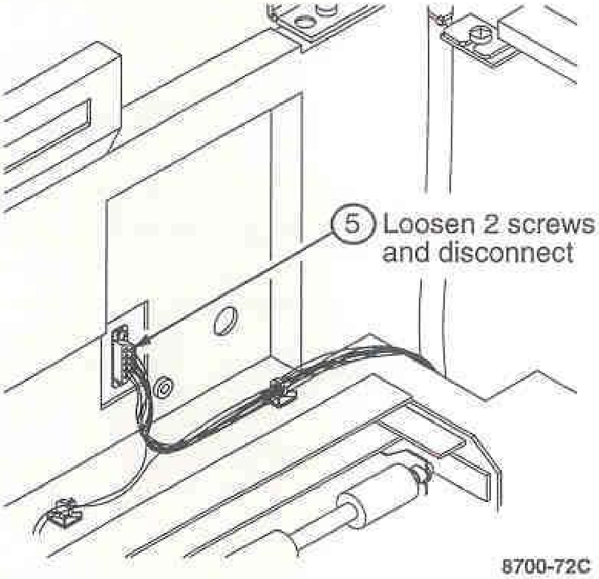


Figure 4-2.

6. Unlatch and open the filter housing. Remove the filter to reduce the weight of the housing.

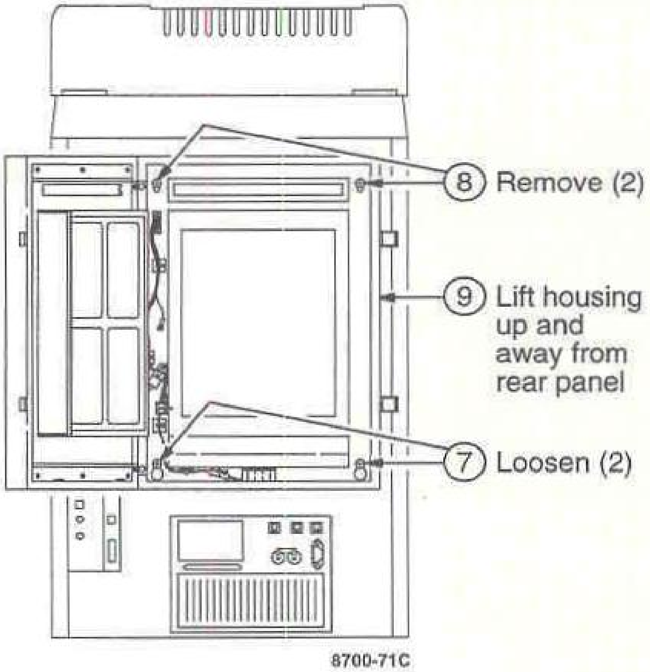

8 Remove (2)
9 Lift housing up and away from rear panel
7 Loosen (2)
8700-71C

Figure 4-3.

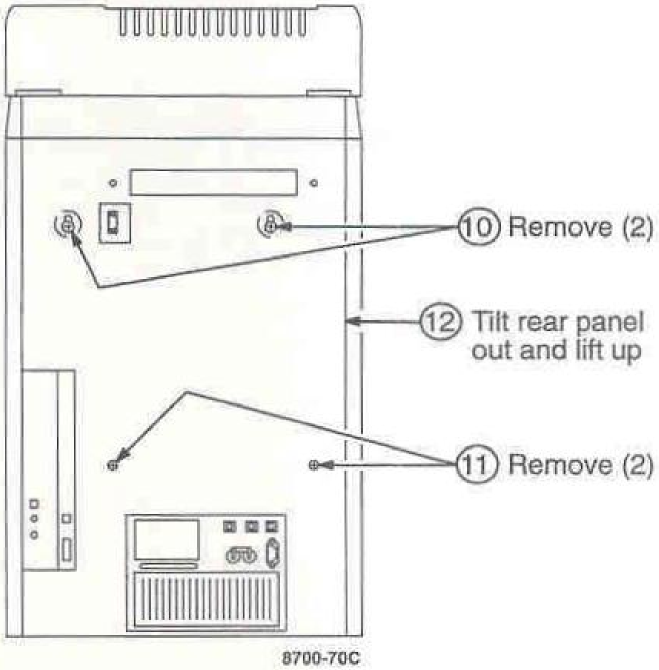

10 Remove (2)
12 Tilt rear panel out and lift up
11 Remove (2)
8700-70C

Figure 4-4.

4-1-3. Right Side Panel

⚠ WARNING

When the power cord is plugged in, hazardous voltages are present in some areas of the 8700. These voltages can cause severe injury or death.

1. Flip down the circuit breaker on the rear of the 8700, then unplug the power cord.
2. Raise the top cover of the 8700.

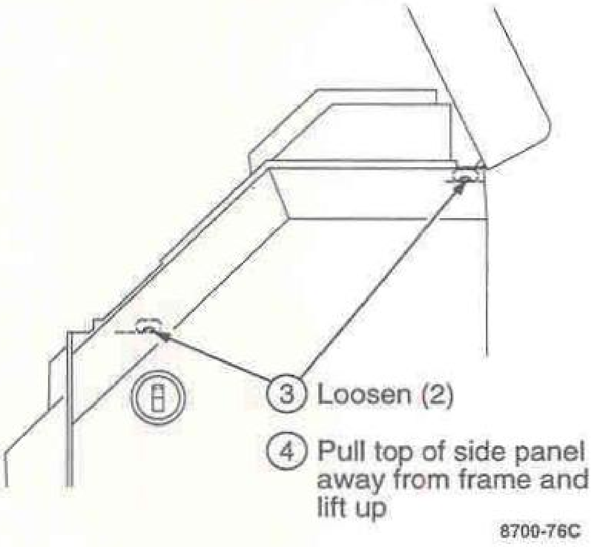

③ Loosen (2)
④ Pull top of side panel away from frame and lift up
8700-76C

Figure 4-5.

4-1-4. Electronics Enclosure Cover

⚠ WARNING

When the power cord is plugged in, hazardous voltages are present in some areas of the 8700. These voltages can cause severe injury or death.

1. Flip down the circuit breaker on the rear of the 8700, then unplug the power cord.
2. Remove the right side panel (4-1-3).

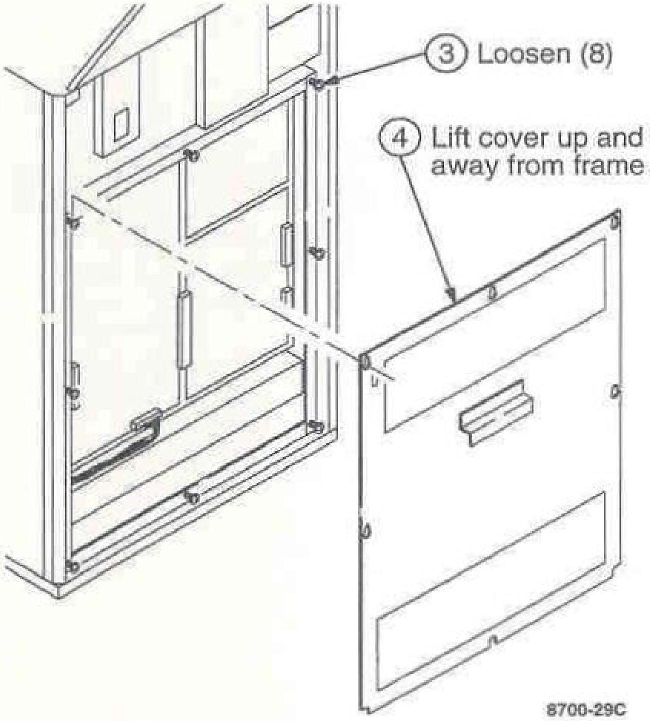

③ Loosen (8)
④ Lift cover up and away from frame
8700-29C

Figure 4-6.

4-2. Processor/Exit Assembly

4-2-1. Processor Drum

⚠ WARNING

When the power cord is plugged in, hazardous voltages are present in some areas of the 8700. These voltages can cause severe injury or death.

1. Flip down the circuit breaker on the rear of the 8700, then unplug the power cord.
2. Raise the top cover of the 8700.
3. Grasp the handle on the front of the processor/exit assembly and pull the assembly out to its extended position.

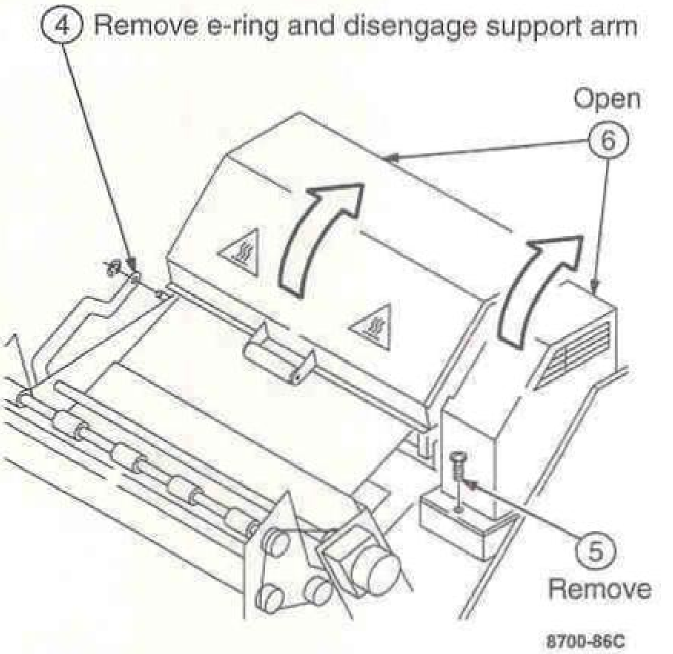

④ Remove e-ring and disengage support arm
Open
⑥
⑤
Remove
8700-86C

Figure 4-7.

⚠ Caution

Hot Surface

When the imager is initially powered down, the processor drum and rollers are hot. Take care when removing the drum.

⚠ Caution

The surface of the drum is easily damaged by fingernails and jewelry. Handle the drum with one hand on the large gear and the other hand on the opposite endcap. Do not touch the gray silicone surface of the drum.

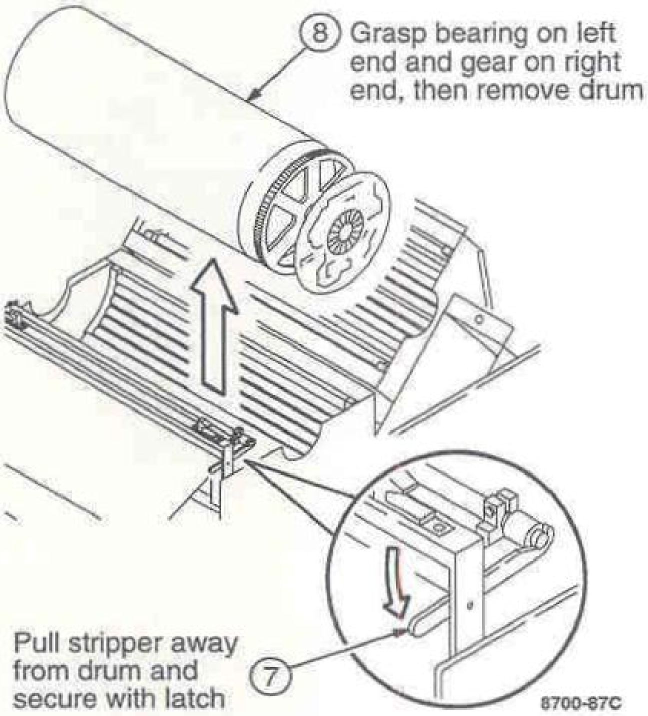

⑧ Grasp bearing on left end and gear on right end, then remove drum
Pull stripper away from drum and secure with latch ⑦
8700-87C

Figure 4-8.

⚠ Caution

The surface of the drum is easily damaged. Do not lay the drum on its side. Instead, lay a roll of tape on a table, then stand the drum on top of the tape. The type of tape is irrelevant, as long as the core of the roll has a diameter greater than 2 inches (51mm).

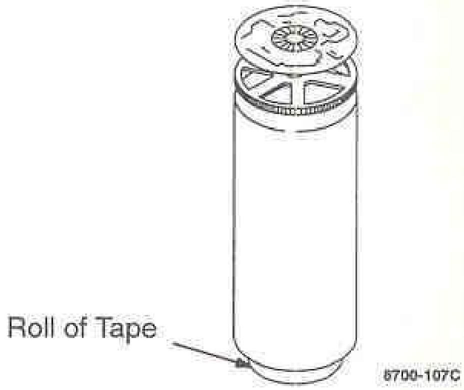


Figure 4-9.

Note

After a new drum has been installed, the processor temperature adjustment must be performed (procedure 3-1).

4-2-2. Processor Rollers

⚠ WARNING

When the power cord is plugged in, hazardous voltages are present in some areas of the 8700. These voltages can cause severe injury or death.

1. Flip down the circuit breaker on the rear of the 8700, then unplug the power cord.
2. Remove the processor drum (4-2-1).

Note

There are three sets of rollers in the processor. The top and middle sets are in the upper half of the housing, and the bottom set is in the lower half of the housing. The middle and bottom sets each have ten rollers. The top set has only nine rollers. When replacing rollers in the top set, do not install a roller in the topmost location (closest to the handle on the processor cover).

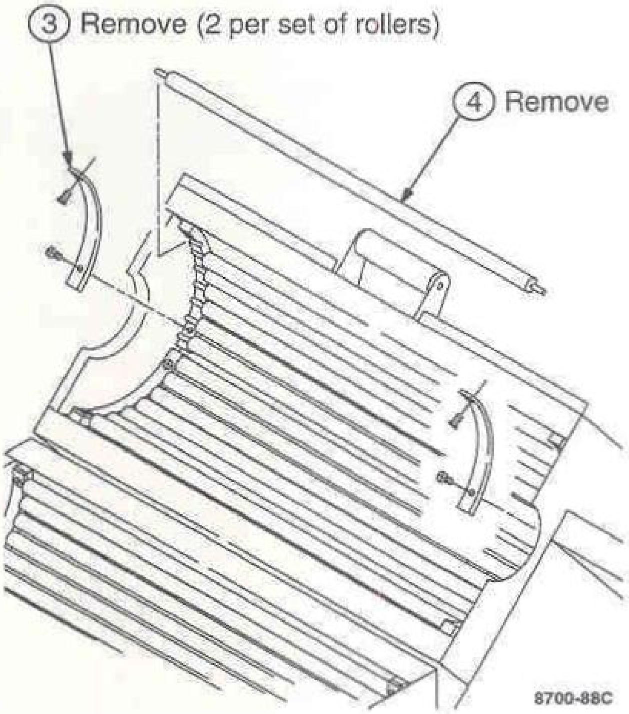


Figure 4-10.

4-2-3. Processor Motor (M301)

⚠ WARNING

When the power cord is plugged in, hazardous voltages are present in some areas of the 8700. These voltages can cause severe injury or death.

1. Flip down the circuit breaker on the rear of the 8700, then unplug the power cord.
2. Remove the processor drum (4-2-1).

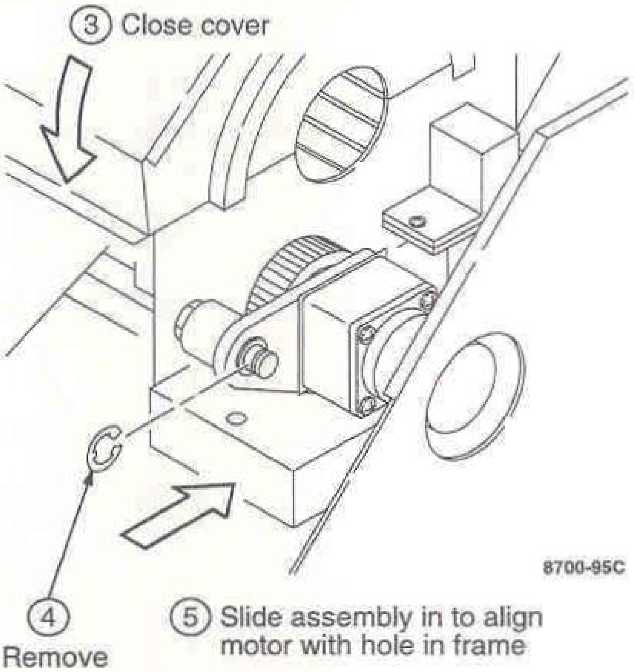

③ Close cover
④ Remove
⑤ Slide assembly in to align motor with hole in frame
8700-95C

Figure 4-11.

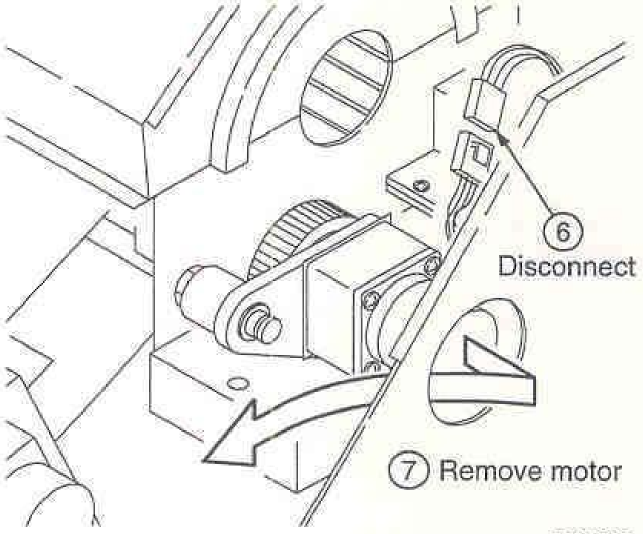

⑥
Disconnect
⑦ Remove motor
8700-96C

Figure 4-12.

4-2-4. Processor Brushes

⚠ WARNING

When the power cord is plugged in, hazardous voltages are present in some areas of the 8700. These voltages can cause severe injury or death.

1. Flip down the circuit breaker on the rear of the 8700, then unplug the power cord.
2. Remove the processor drum (4-2-1).

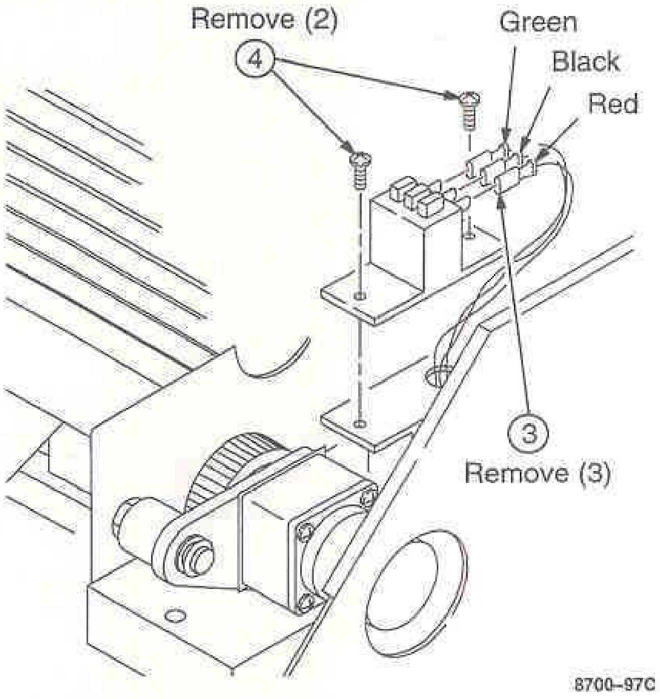

Remove (2)
④
Green
Black
Red
③
Remove (3)
8700–97C

Figure 4-13.

4-2-5. Processor Communication Board (PCB)

⚠ WARNING

When the power cord is plugged in, hazardous voltages are present in some areas of the 8700. These voltages can cause severe injury or death.

1. Flip down the circuit breaker on the rear of the 8700, then unplug the power cord.
2. Raise the top cover of the 8700.
3. Grasp the handle on the front of the processor/exit assembly and pull the assembly out to its extended position.

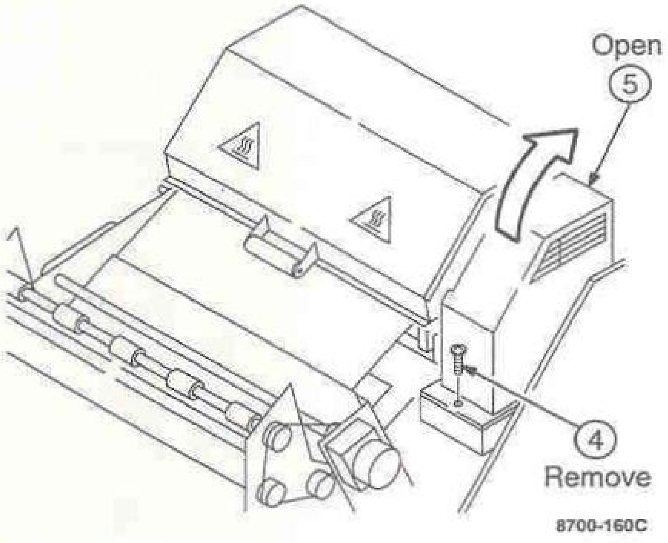


Figure 4-14.

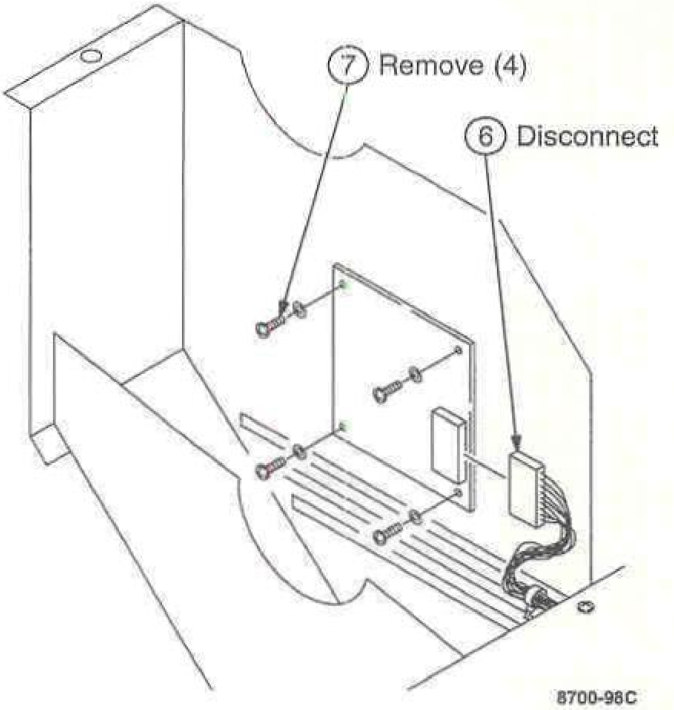

⑦ Remove (4)
⑥ Disconnect
8700-98C

Figure 4-15.

Note

After a new PCB has been installed, the processor temperature adjustment must be performed (procedure 3-1).

4-2-6. Rotating Processor Board (RPB)

⚠ WARNING

When the power cord is plugged in, hazardous voltages are present in some areas of the 8700. These voltages can cause severe injury or death.

1. Flip down the circuit breaker on the rear of the 8700, then unplug the power cord.
2. Remove the processor drum (4-2-1).

Note

When reassembling, be aware of the colors of the four wires with spade connectors. The color code is printed next to the terminals on the RPB.

Note

After a new RPB has been installed, the processor temperature adjustment must be performed (procedure 3-1).

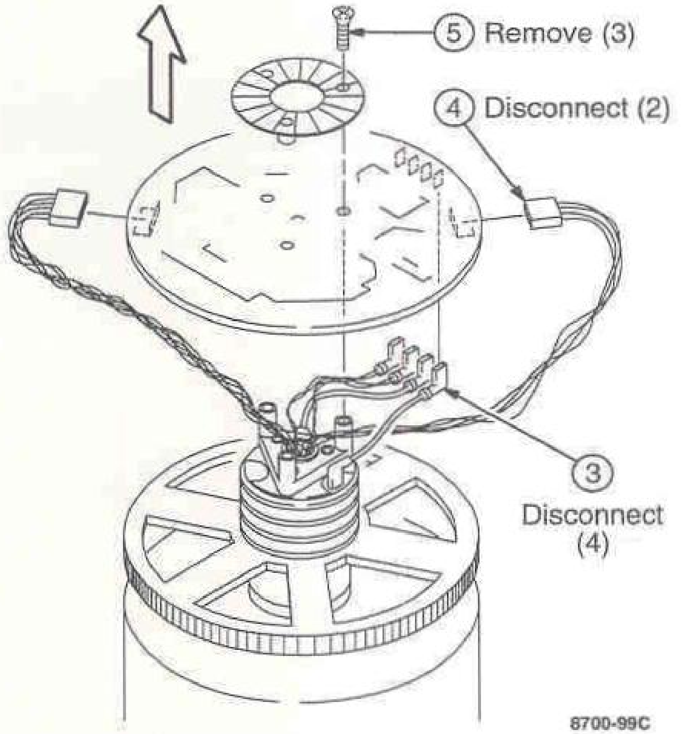


Figure 4-16.

4-2-7. Processor Slip Rings

⚠ WARNING

When the power cord is plugged in, hazardous voltages are present in some areas of the 8700. These voltages can cause severe injury or death.

1. Flip down the circuit breaker on the rear of the 8700, then unplug the power cord.
2. Remove the processor drum (4-2-1).
3. Remove the rotating processor board (4-2-6).

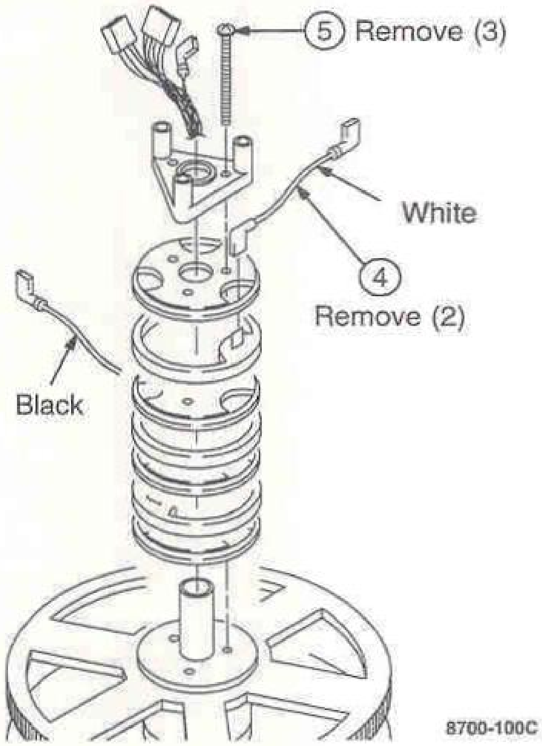


Figure 4-17.

4-2-8. Processor Thermal Fuses

⚠ WARNING

When the power cord is plugged in, hazardous voltages are present in some areas of the 8700. These voltages can cause severe injury or death.

1. Flip down the circuit breaker on the rear of the 8700, then unplug the power cord.
2. Remove the processor drum (4-2-1).

⚠ Caution

The drum must be laid on its side in order to remove the thermal fuses. To prevent damage to the surface of the drum, lay the drum on a soft, lint-free object (for example, a folded cloth towel covered with the lint-free cloths used for cleaning the drum).

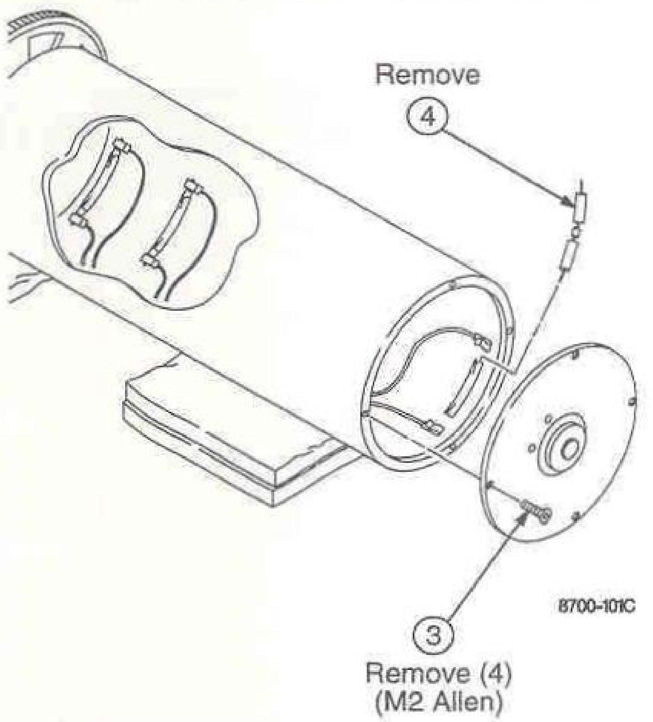


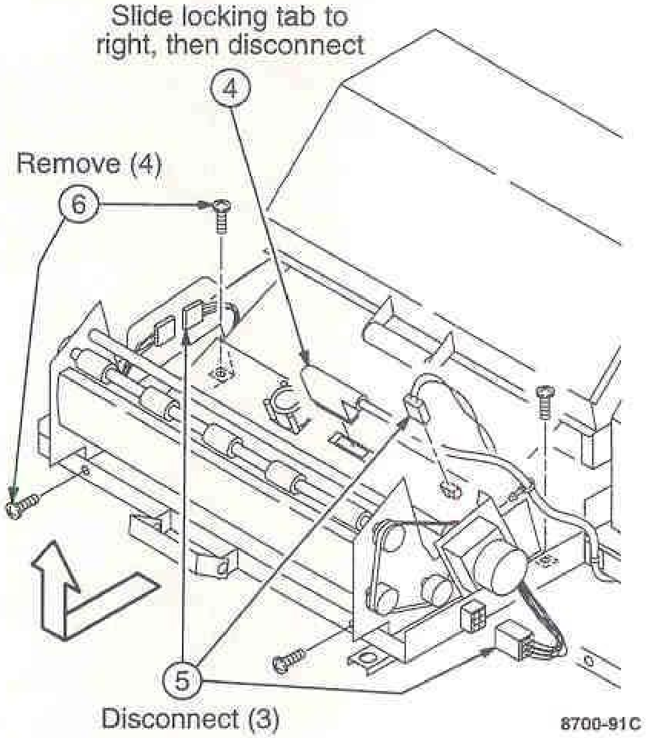
Figure 4-18.

4-2-9. Exit Assembly

⚠ WARNING

When the power cord is plugged in, hazardous voltages are present in some areas of the 8700. These voltages can cause severe injury or death.

1. Flip down the circuit breaker on the rear of the 8700, then unplug the power cord.
2. Raise the top cover of the 8700.
3. Grasp the handle on the front of the processor/exit assembly and pull the assembly out to its extended position.



Slide locking tab to right, then disconnect
④
Remove (4)
⑥
⑤
Disconnect (3)
8700-91C

Figure 4-19.

4-2-10. Exit Motor (M303)

⚠ WARNING

When the power cord is plugged in, hazardous voltages are present in some areas of the 8700. These voltages can cause severe injury or death.

1. Flip down the circuit breaker on the rear of the 8700, then unplug the power cord.
2. Raise the top cover of the 8700.
3. Grasp the handle on the front of the processor/exit assembly and pull the assembly out to its extended position.

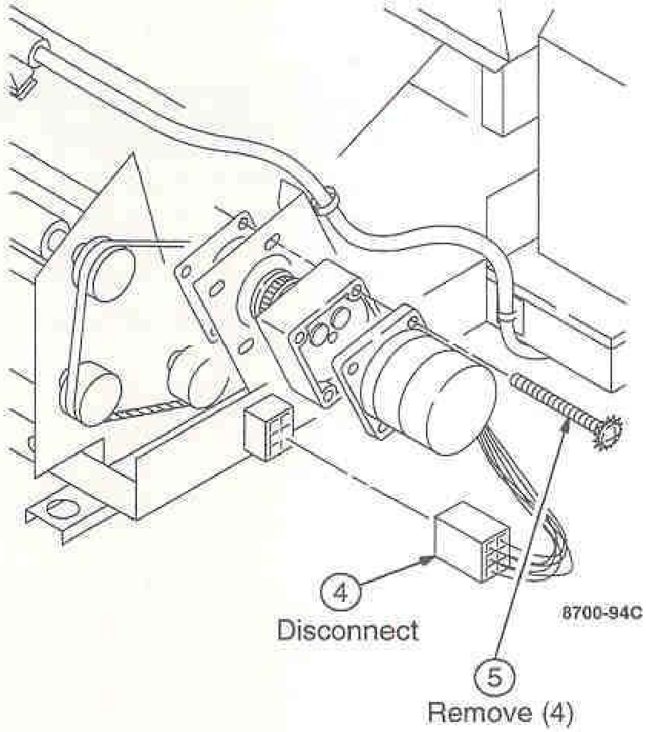


Figure 4-20.

4-2-11. Processor Exit Sensor (SW301)

⚠ WARNING

When the power cord is plugged in, hazardous voltages are present in some areas of the 8700. These voltages can cause severe injury or death.

1. Flip down the circuit breaker on the rear of the 8700, then unplug the power cord.
2. Remove the exit assembly (4-2-9).

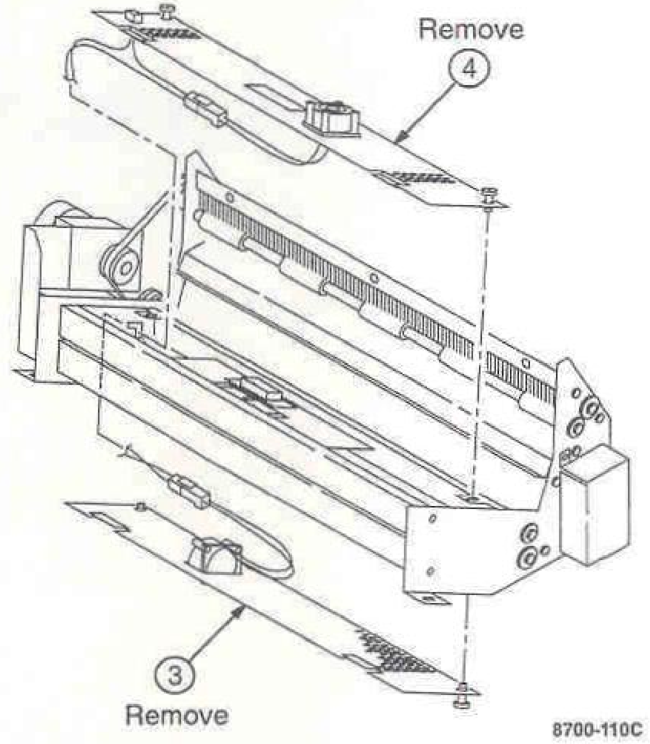


Figure 4-21.

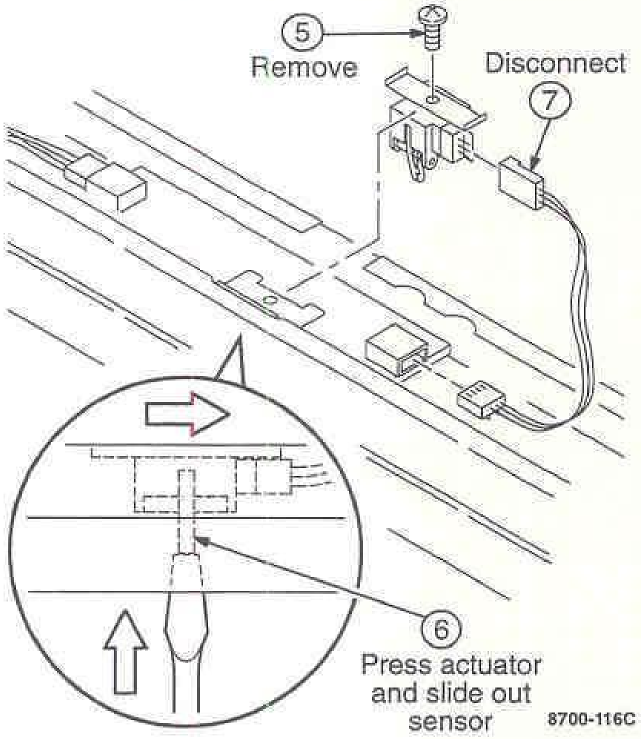

⑤
Remove
Disconnect
⑦
⑥
Press actuator and slide out sensor
8700-116C

Figure 4-22.

4-2-12. Processor Entrance Sensor (SW302)

⚠ WARNING

When the power cord is plugged in, hazardous voltages are present in some areas of the 8700. These voltages can cause severe injury or death.

1. Flip down the circuit breaker on the rear of the 8700, then unplug the power cord.
2. Remove the processor drum (4-2-1).
3. Remove the exit assembly (4-2-9).

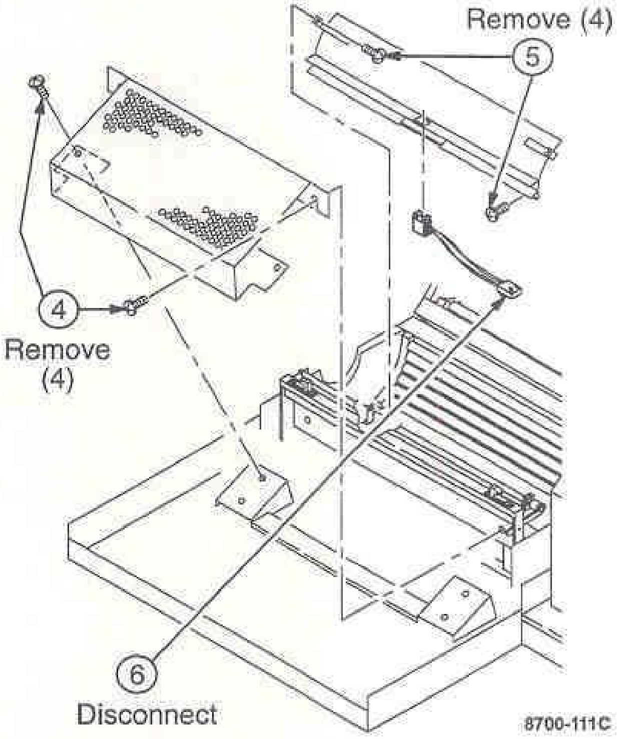


Figure 4-23.

4-2-13. Exit Transport Sensor (SW304)

⚠ WARNING

When the power cord is plugged in, hazardous voltages are present in some areas of the 8700. These voltages can cause severe injury or death.

1. Flip down the circuit breaker on the rear of the 8700, then unplug the power cord.
2. Raise the top cover of the 8700.

Note

After reassemby, check the adjustment of the sensor actuator (procedure 3-5).

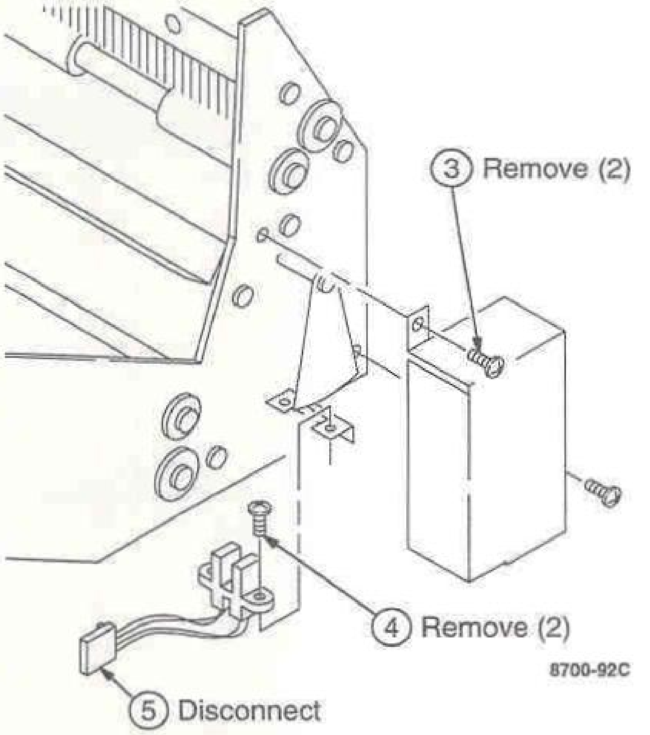


Figure 4-24.

4-2-14. Densitometer Assembly

⚠ WARNING

When the power cord is plugged in, hazardous voltages are present in some areas of the 8700. These voltages can cause severe injury or death.

1. Flip down the circuit breaker on the rear of the 8700, then unplug the power cord.
2. Remove the exit assembly (4-2-9).

Note

After a new densitometer has been installed, a densitometer calibration must be performed (procedure 3-3).

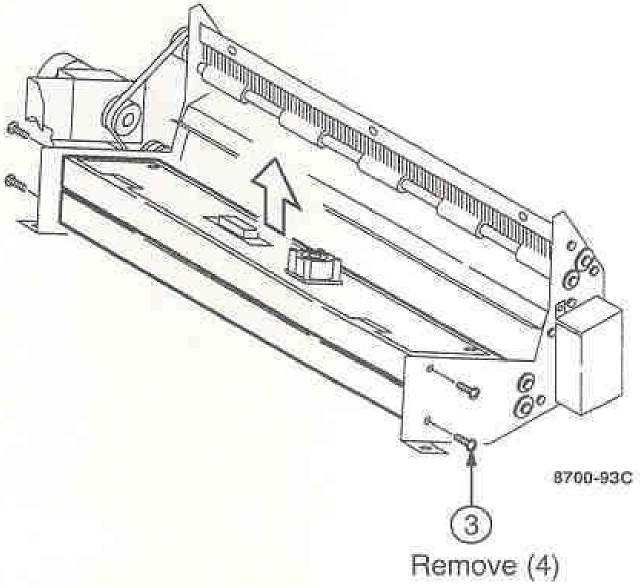


Figure 4-25.

4-3. Transport Assembly

4-3-1. Transport Motor (M402)

1. Remove the supply cartridge.

> **⚠ WARNING**
>
> When the power cord is plugged in, hazardous voltages are present in some areas of the 8700. These voltages can cause severe injury or death.

2. Flip down the circuit breaker on the rear of the 8700, then unplug the power cord.
3. Open the left side door.
4. Squeeze the handle on the transport assembly and pull the assembly out to its extended position.

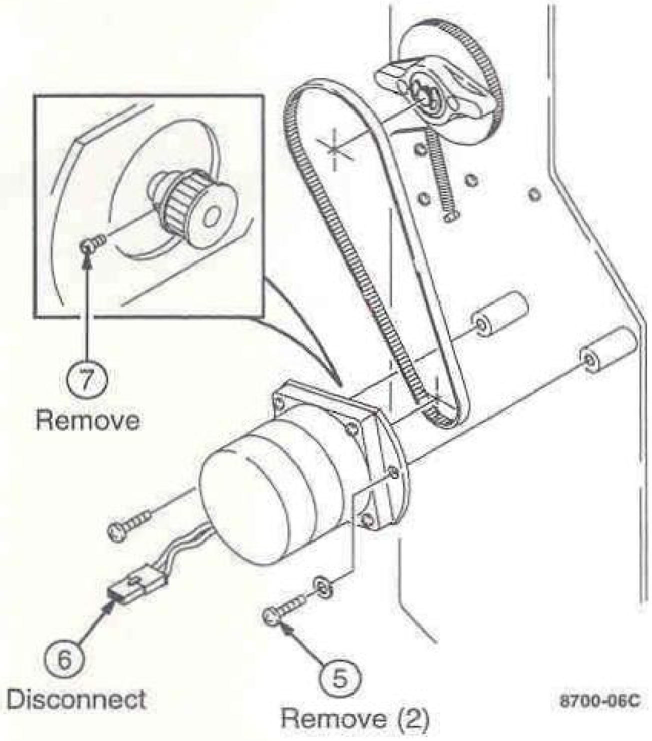


Figure 4-26.

4-3-2. Transport Feed Roll Motor (M401)

1. Remove the supply cartridge.

> **⚠ WARNING**
>
> When the power cord is plugged in, hazardous voltages are present in some areas of the 8700. These voltages can cause severe injury or death.

2. Flip down the circuit breaker on the rear of the 8700, then unplug the power cord.
3. Remove the rear panel from the 8700 (4-1-2).
4. Open the left side door.
5. Squeeze the handle on the transport assembly and pull the assembly out to its extended position.

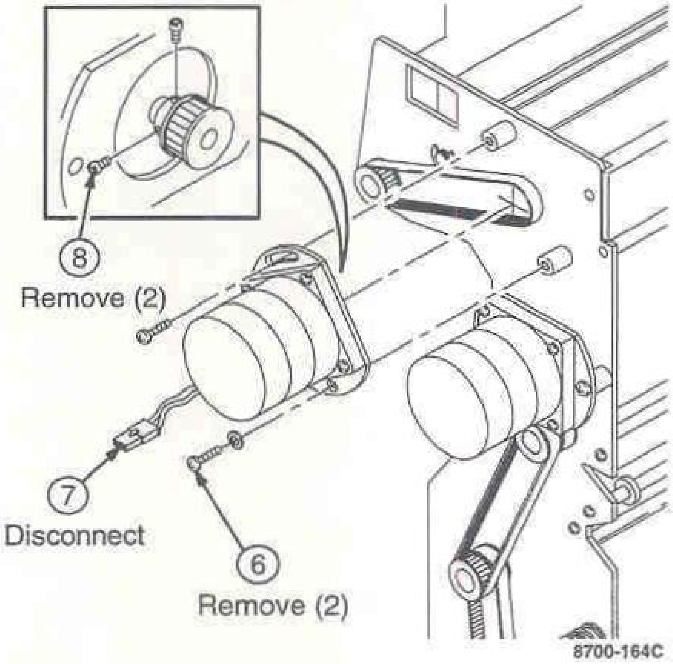


Figure 4-27.

4-3-3. Platen Motor (M403)

1. Remove the supply cartridge.

⚠ WARNING

When the power cord is plugged in, hazardous voltages are present in some areas of the 8700. These voltages can cause severe injury or death.

2. Flip down the circuit breaker on the rear of the 8700, then unplug the power cord.
3. Remove the rear panel from the 8700 (4-1-2).
4. Open the left side door.
5. Squeeze the handle on the transport assembly and pull the assembly out to its extended position.

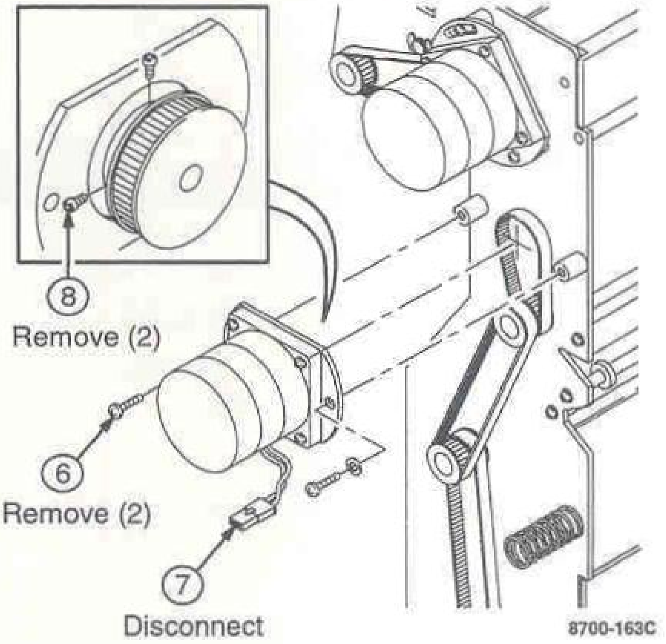


Figure 4-28.

4-3-4. Platen Entrance Sensor (SW402)

1. Remove the supply cartridge.

⚠ WARNING

When the power cord is plugged in, hazardous voltages are present in some areas of the 8700. These voltages can cause severe injury or death.

2. Flip down the circuit breaker on the rear of the 8700, then unplug the power cord.
3. Open the left side door.
4. Squeeze the handle on the transport assembly and pull the assembly out to its extended position.

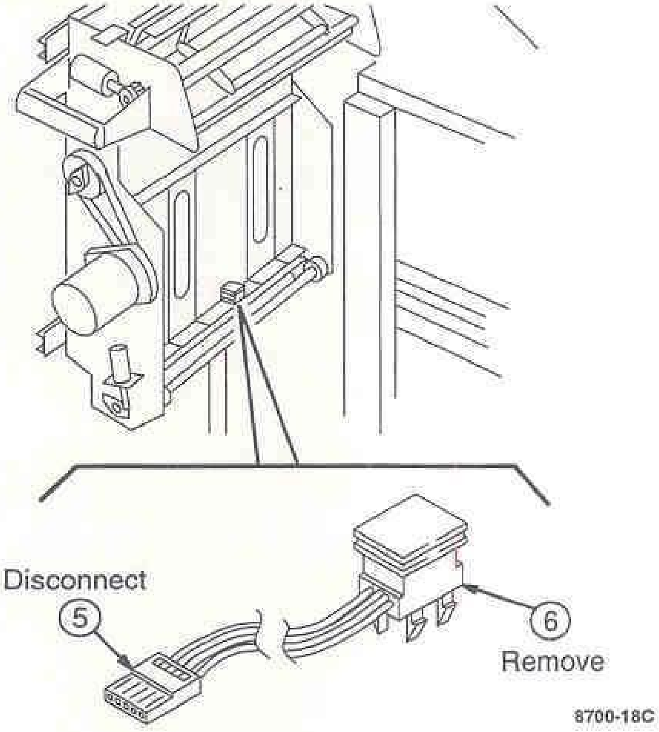


Figure 4-29.

4-3-5. Platen Exit Sensor (SW403)

1. Remove the supply cartridge.

⚠ WARNING

When the power cord is plugged in, hazardous voltages are present in some areas of the 8700. These voltages can cause severe injury or death.

2. Flip down the circuit breaker on the rear of the 8700, then unplug the power cord.
3. Open the left side door.
4. Squeeze the handle on the transport assembly and pull the assembly out to its extended position.

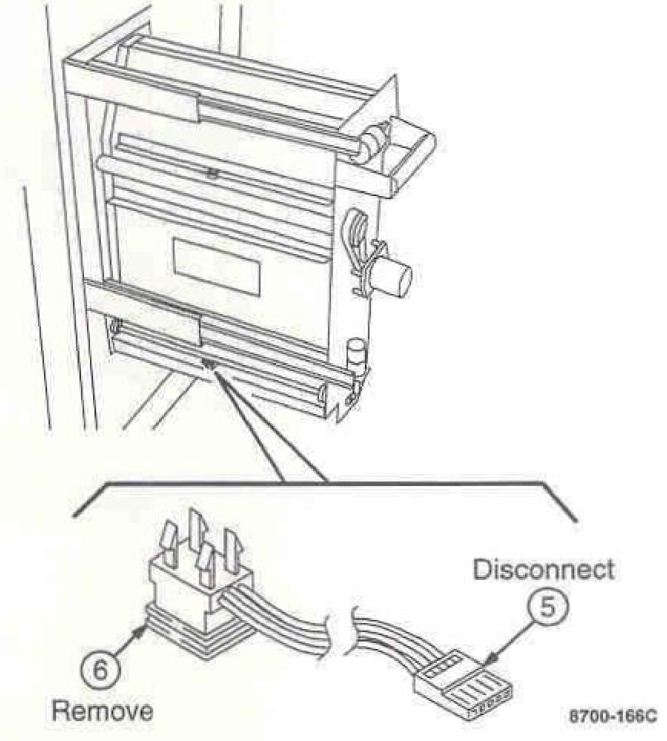


Figure 4-30.

4-3-6. Transport Midpoint Sensor (SW404)

1. Remove the supply cartridge.

⚠ WARNING

When the power cord is plugged in, hazardous voltages are present in some areas of the 8700. These voltages can cause severe injury or death.

2. Flip down the circuit breaker on the rear of the 8700, then unplug the power cord.
3. Open the left side door.
4. Squeeze the handle on the transport assembly and pull the assembly out to its extended position.

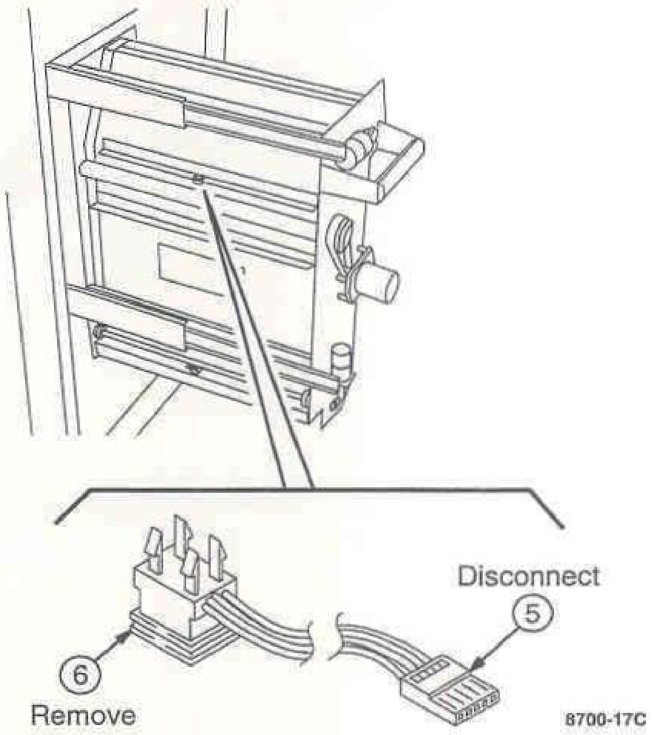


Figure 4-31.

4-3-7. Transport Feed Sensor (SW405)

1. Remove the supply cartridge.

> **⚠ WARNING**
>
> When the power cord is plugged in, hazardous voltages are present in some areas of the 8700. These voltages can cause severe injury or death.

2. Flip down the circuit breaker on the rear of the 8700, then unplug the power cord.
3. Open the left side door.
4. Squeeze the handle on the transport assembly and pull the assembly out to its extended position.

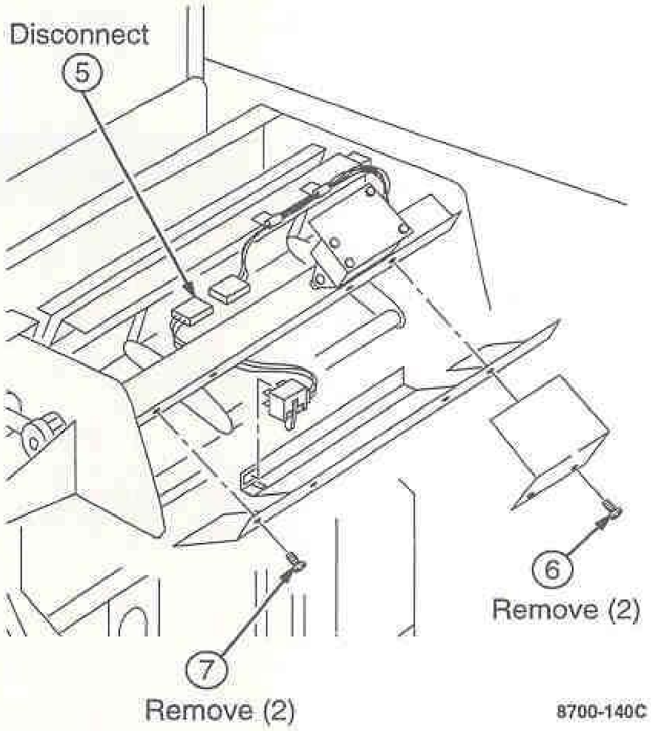


Figure 4-32.

4-3-8. Tongue Depressor Sensor (SW406)

1. Remove the supply cartridge.

> **⚠ WARNING**
>
> When the power cord is plugged in, hazardous voltages are present in some areas of the 8700. These voltages can cause severe injury or death.

2. Flip down the circuit breaker on the rear of the 8700, then unplug the power cord.
3. Open the left side door.
4. Squeeze the handle on the transport assembly and pull the assembly out to its extended position.

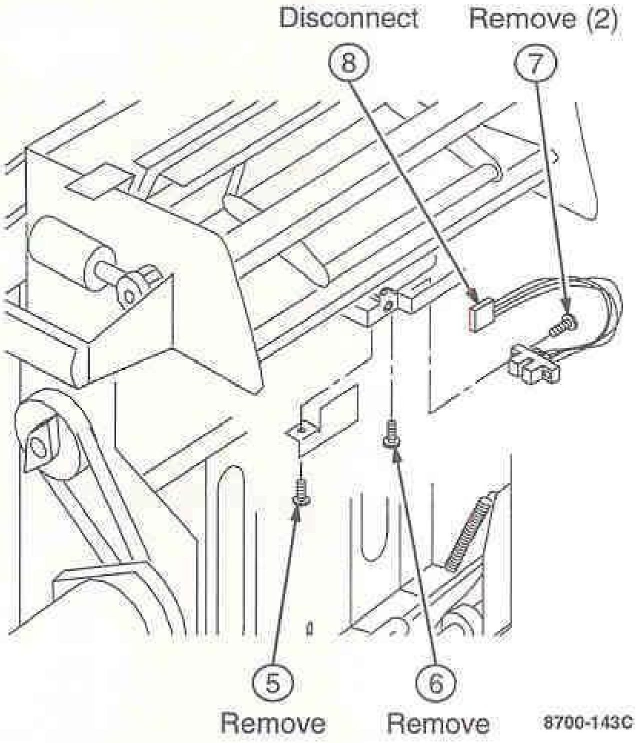


Figure 4-33.

4-3-9. Tongue Depressor Interrupt Switch (SW407)

1. Remove the supply cartridge.

⚠ WARNING

When the power cord is plugged in, hazardous voltages are present in some areas of the 8700. These voltages can cause severe injury or death.

2. Flip down the circuit breaker on the rear of the 8700, then unplug the power cord.
3. Open the left side door.
4. Squeeze the handle on the transport assembly and pull the assembly out to its extended position.

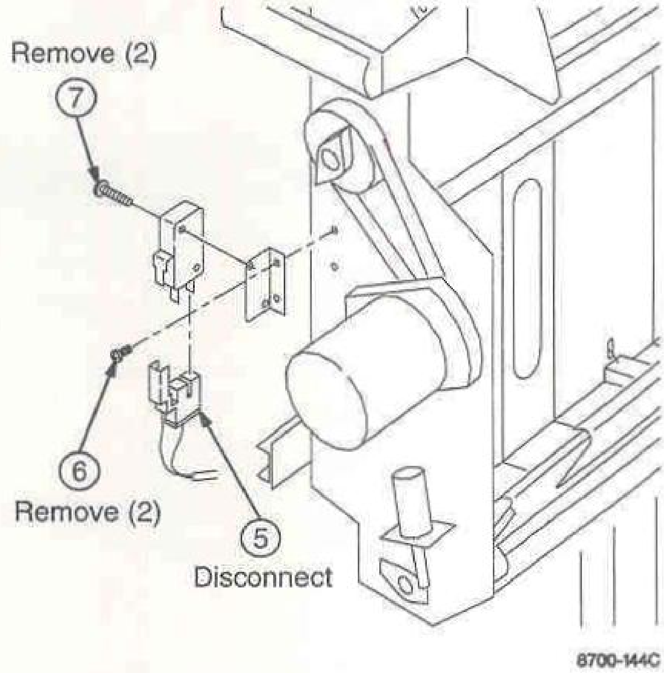


Figure 4-34.

4-3-10. Tongue Depressor Solenoid (Y401)

1. Remove the supply cartridge.

> **⚠ WARNING**
>
> When the power cord is plugged in, hazardous voltages are present in some areas of the 8700. These voltages can cause severe injury or death.

2. Flip down the circuit breaker on the rear of the 8700, then unplug the power cord.
3. Open the left side door.
4. Squeeze the handle on the transport assembly and pull the assembly out to its extended position.

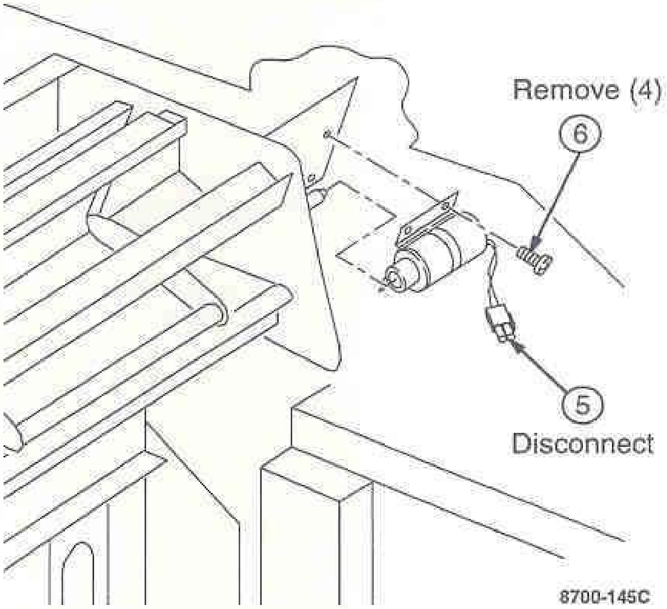


Figure 4-35.

4-3-11. Transport Feed Roll Solenoid (Y402)

1. Remove the supply cartridge.

⚠ WARNING

When the power cord is plugged in, hazardous voltages are present in some areas of the 8700. These voltages can cause severe injury or death.

2. Flip down the circuit breaker on the rear of the 8700, then unplug the power cord.
3. Open the left side door.
4. Squeeze the handle on the transport assembly and pull the assembly out to its extended position.

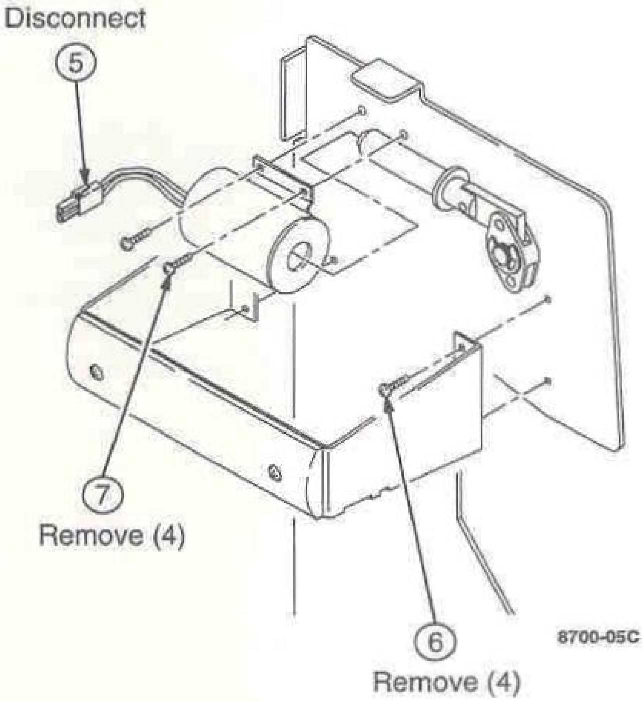


Figure 4-36.

4-3-12. Gate Solenoid (Y403)

1. Remove the supply cartridge.

⚠ WARNING

When the power cord is plugged in, hazardous voltages are present in some areas of the 8700. These voltages can cause severe injury or death.

2. Flip down the circuit breaker on the rear of the 8700, then unplug the power cord.
3. Open the left side door.
4. Squeeze the handle on the transport assembly and pull the assembly out to its extended position.

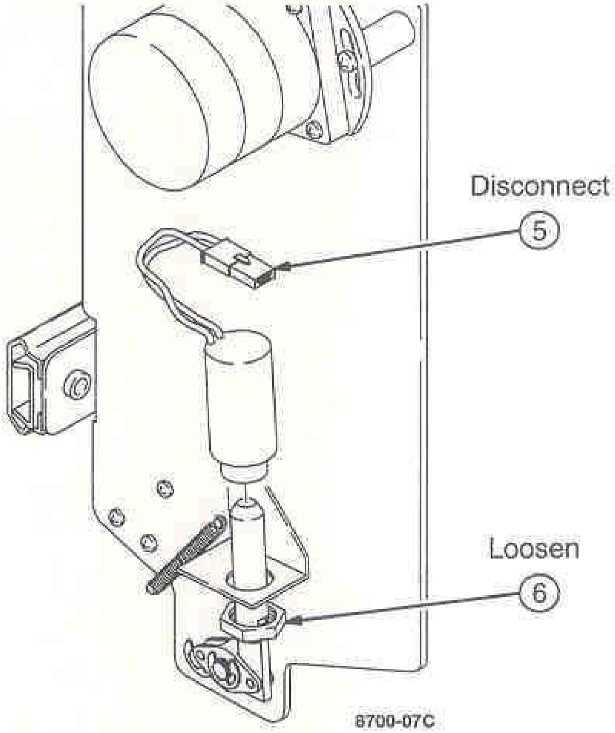


Figure 4-37.

4-3-13. Multifeed Board (MFB)

1. Remove the supply cartridge.

⚠ WARNING

When the power cord is plugged in, hazardous voltages are present in some areas of the 8700. These voltages can cause severe injury or death.

2. Flip down the circuit breaker on the rear of the 8700, then unplug the power cord.
3. Open the left side door.
4. Squeeze the handle on the transport assembly and pull the assembly out to its extended position.

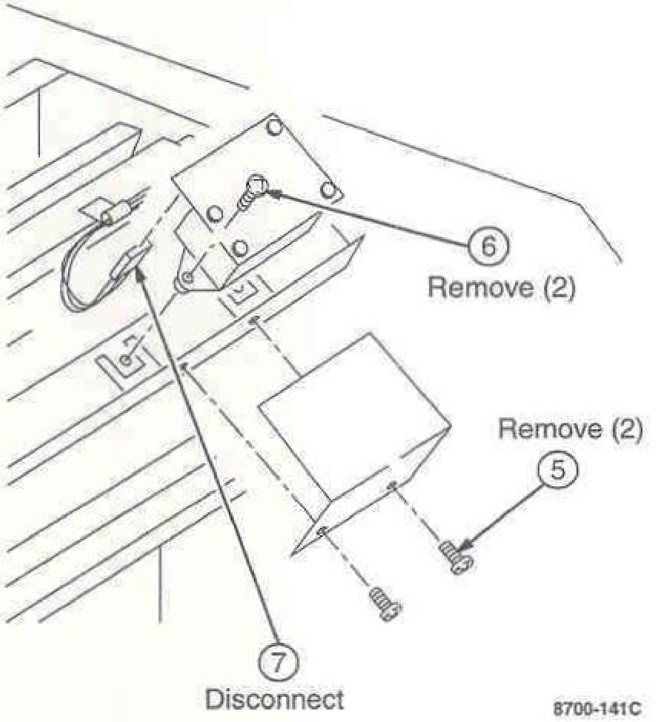


Figure 4-38.

4-4. Pickup Assembly

4-4-1. Pickup Module

1. Remove the supply cartridge.

> **⚠ WARNING**
>
> When the power cord is plugged in, hazardous voltages are present in some areas of the 8700. These voltages can cause severe injury or death.

2. Flip down the circuit breaker on the rear of the 8700, then unplug the power cord.
3. Remove the front panel (4-1-1).

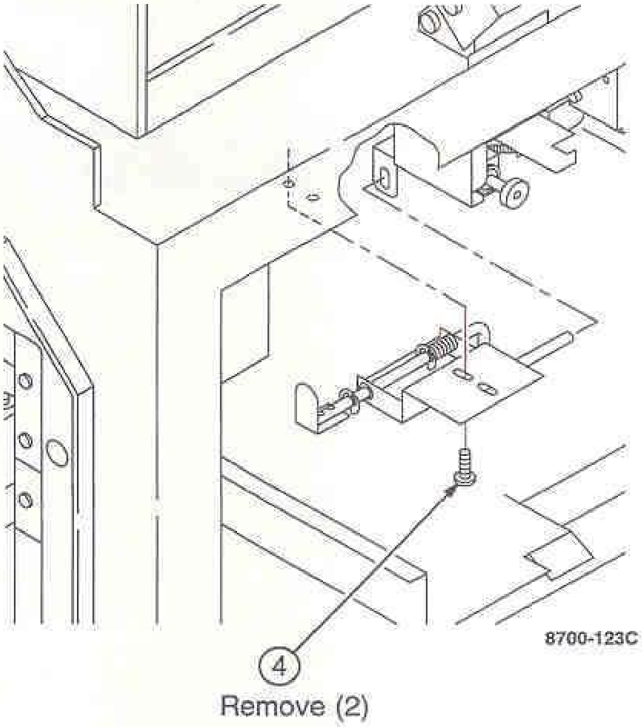


Figure 4-39.

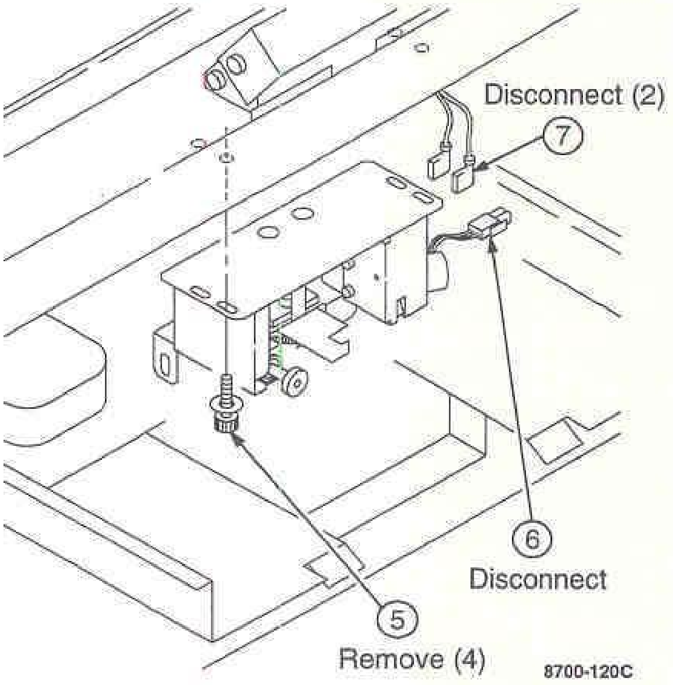

Disconnect (2)
⑦
⑥
Disconnect
⑤
Remove (4)
8700-120C

Figure 4-40.

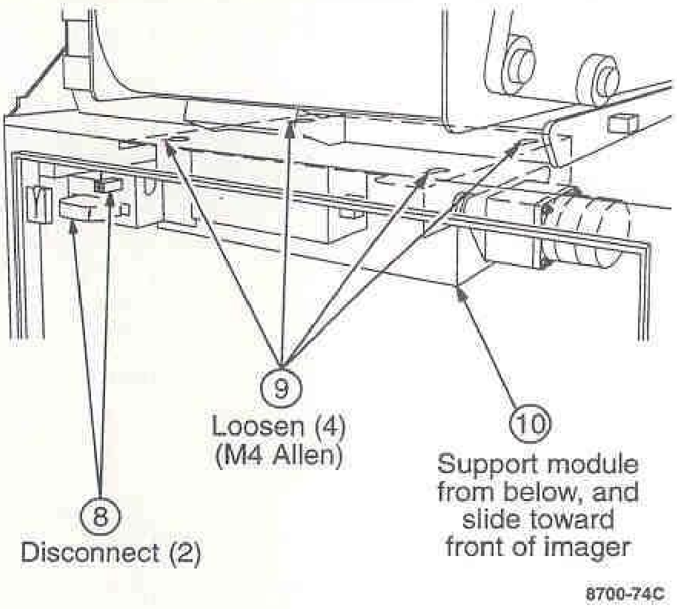

⑨
Loosen (4)
(M4 Allen)
⑩
Support module from below, and slide toward front of imager
⑧
Disconnect (2)
8700-74C

Figure 4-41.

4-4-2. Vacuum Relay (K501)

1. Remove the supply cartridge.

⚠ WARNING

When the power cord is plugged in, hazardous voltages are present in some areas of the 8700. These voltages can cause severe injury or death.

2. Flip down the circuit breaker on the rear of the 8700, then unplug the power cord.
3. Remove the front panel (4-1-1).

Note

When reassembling, check the labels on the wires to ensure that they are connected to the correct terminals. The terminal numbers are marked on the relay.

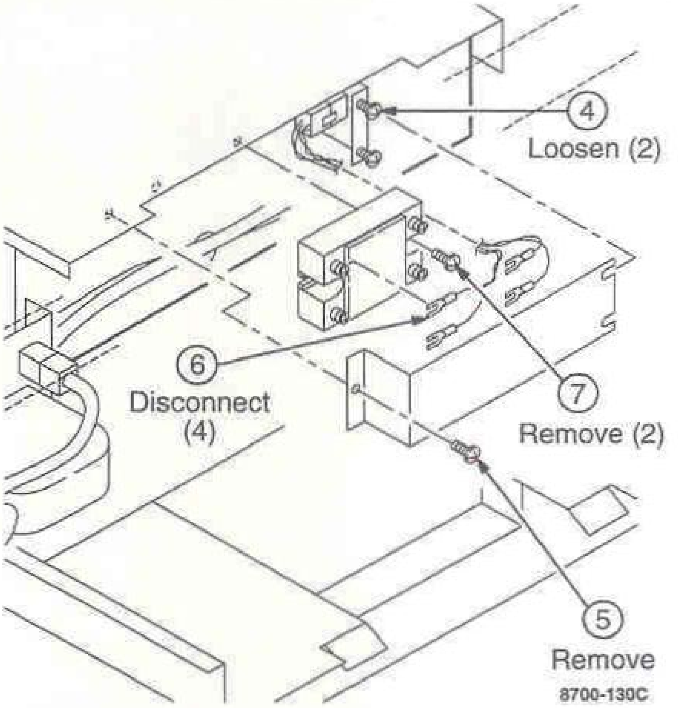


Figure 4-42.

4-4-3. Pickup Motor (M501)

1. Remove the supply cartridge.

> **⚠ WARNING**
>
> When the power cord is plugged in, hazardous voltages are present in some areas of the 8700. These voltages can cause severe injury or death.

2. Flip down the circuit breaker on the rear of the 8700, then unplug the power cord.
3. Remove the pickup module (4-4-1).

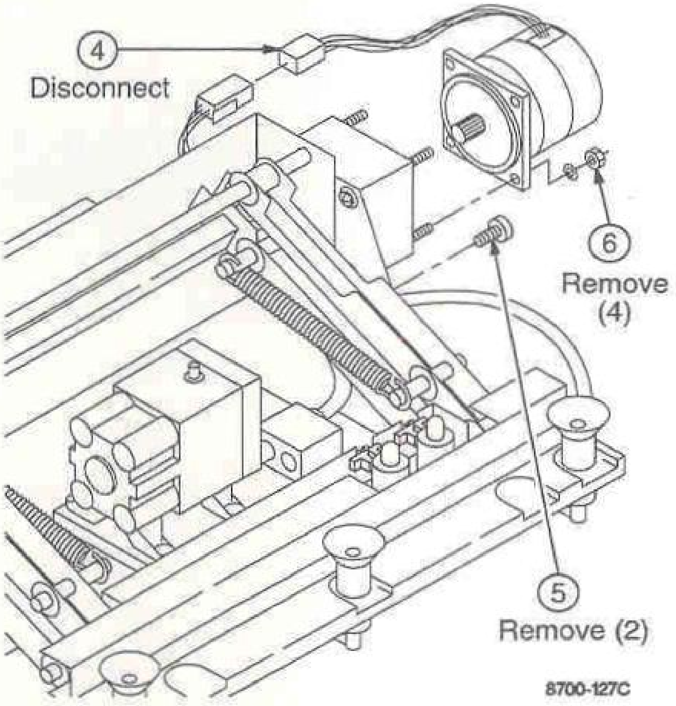

④
Disconnect
⑥
Remove
(4)
⑤
Remove (2)
8700-127C

Figure 4-43.

4-4-4. Vacuum Pump (M502)

1. Remove the supply cartridge.

⚠ WARNING

When the power cord is plugged in, hazardous voltages are present in some areas of the 8700. These voltages can cause severe injury or death.

2. Flip down the circuit breaker on the rear of the 8700, then unplug the power cord.
3. Remove the pickup module (4-4-1).

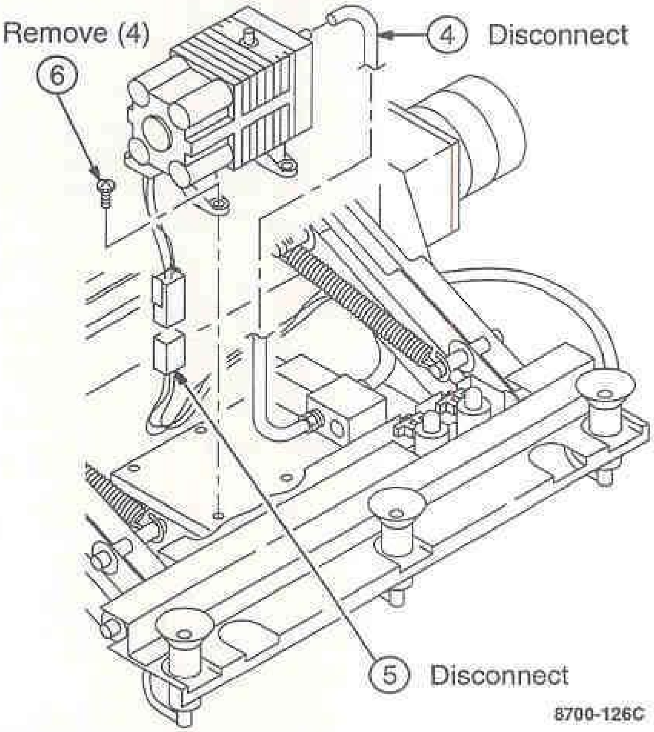

Remove (4)
⑥
④ Disconnect
⑤ Disconnect
8700-126C

Figure 4-44.

4-4-5. Picker Down Sensor (SW501)

1. Remove the supply cartridge.

⚠ WARNING

When the power cord is plugged in, hazardous voltages are present in some areas of the 8700. These voltages can cause severe injury or death.

2. Flip down the circuit breaker on the rear of the 8700, then unplug the power cord.
3. Remove the pickup module (4-4-1).

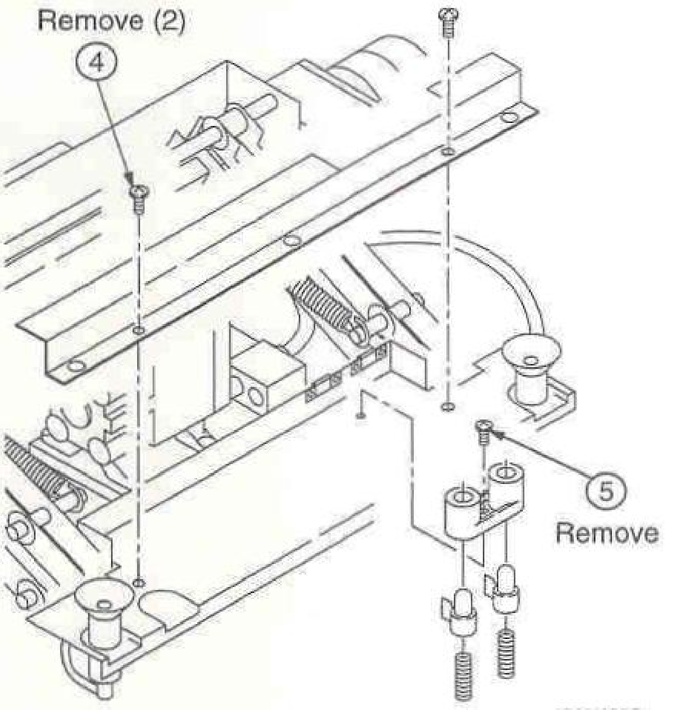


Figure 4-45.

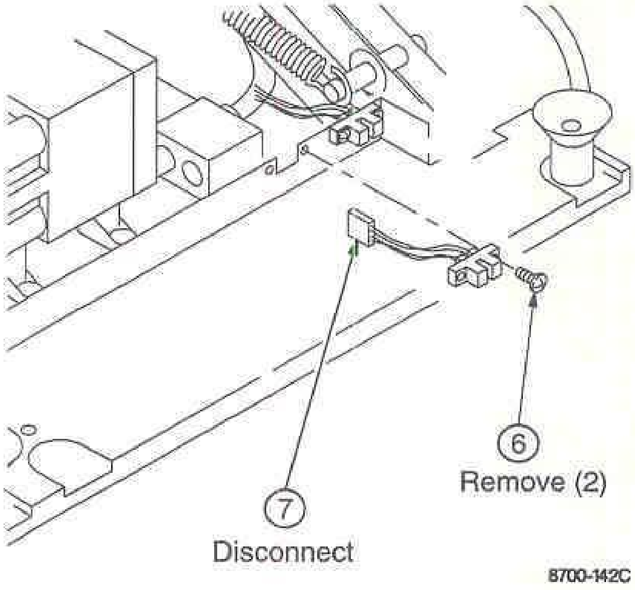

⑥
Remove (2)
⑦
Disconnect
8700-142C

Figure 4-46.

4-4-6. Film Out Sensor (SW502)

1. Remove the supply cartridge.

⚠ WARNING

When the power cord is plugged in, hazardous voltages are present in some areas of the 8700. These voltages can cause severe injury or death.

2. Flip down the circuit breaker on the rear of the 8700, then unplug the power cord.
3. Remove the pickup module (4-4-1).

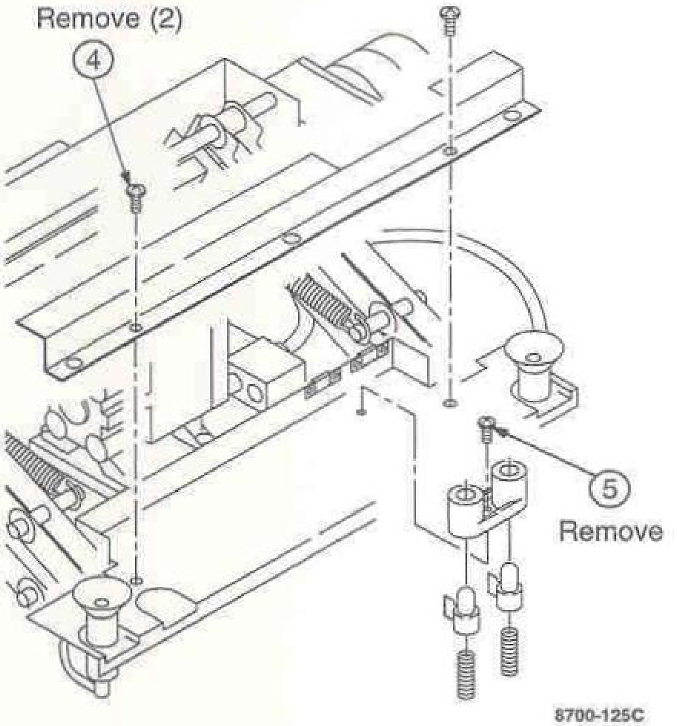


Figure 4-47.

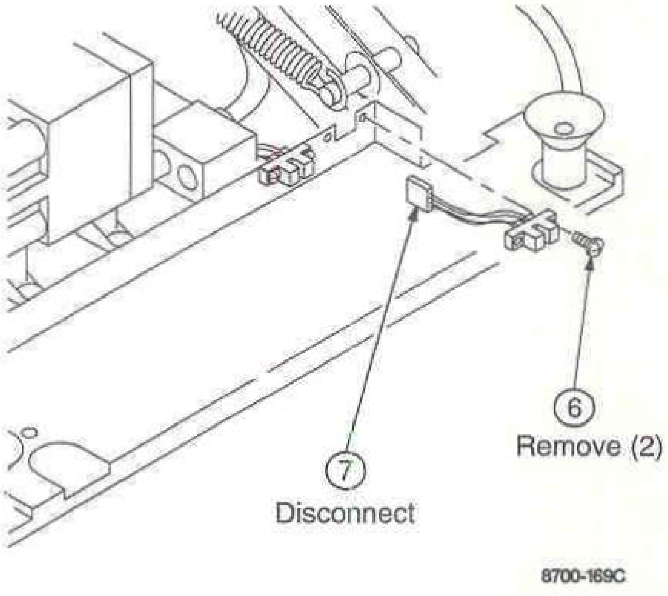

⑥
Remove (2)
⑦
Disconnect
8700-169C

Figure 4-48.

4-4-7. Picker Up Sensor (SW503)

1. Remove the supply cartridge.

⚠ WARNING

When the power cord is plugged in, hazardous voltages are present in some areas of the 8700. These voltages can cause severe injury or death.

2. Flip down the circuit breaker on the rear of the 8700, then unplug the power cord.
3. Remove the pickup module (4-4-1).

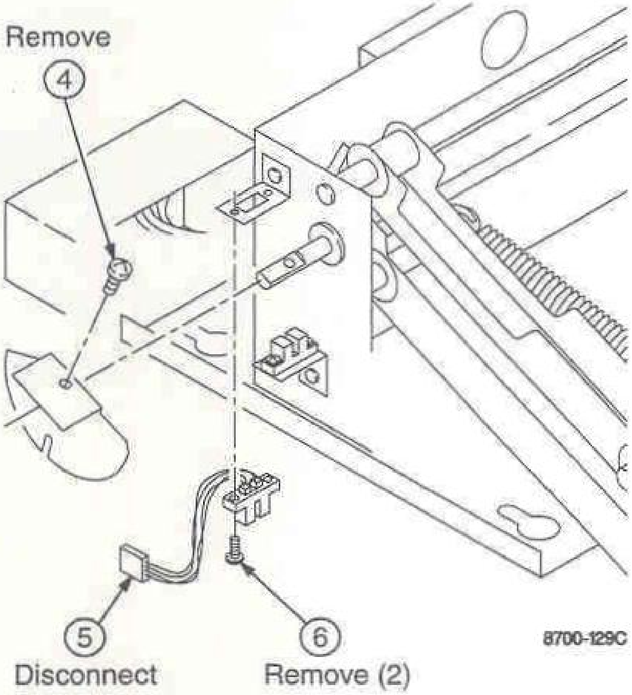


Figure 4-49.

4-4-8. Picker Extended Sensor (SW504)

1. Remove the supply cartridge.

⚠ WARNING

When the power cord is plugged in, hazardous voltages are present in some areas of the 8700. These voltages can cause severe injury or death.

2. Flip down the circuit breaker on the rear of the 8700, then unplug the power cord.
3. Remove the pickup module (4-4-1).

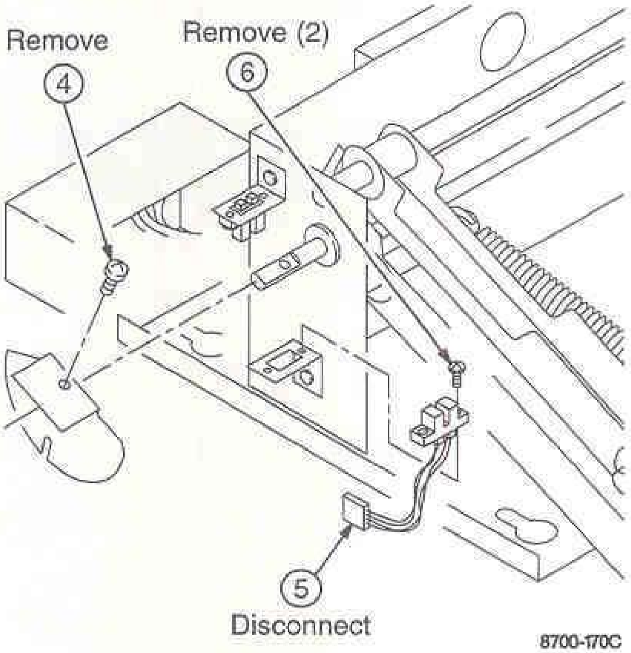


Figure 4-50.

4-4-9. Vacuum Solenoid (Y501)

1. Remove the supply cartridge.

⚠ WARNING

When the power cord is plugged in, hazardous voltages are present in some areas of the 8700. These voltages can cause severe injury or death.

2. Flip down the circuit breaker on the rear of the 8700, then unplug the power cord.
3. Remove the pickup module (4-4-1).

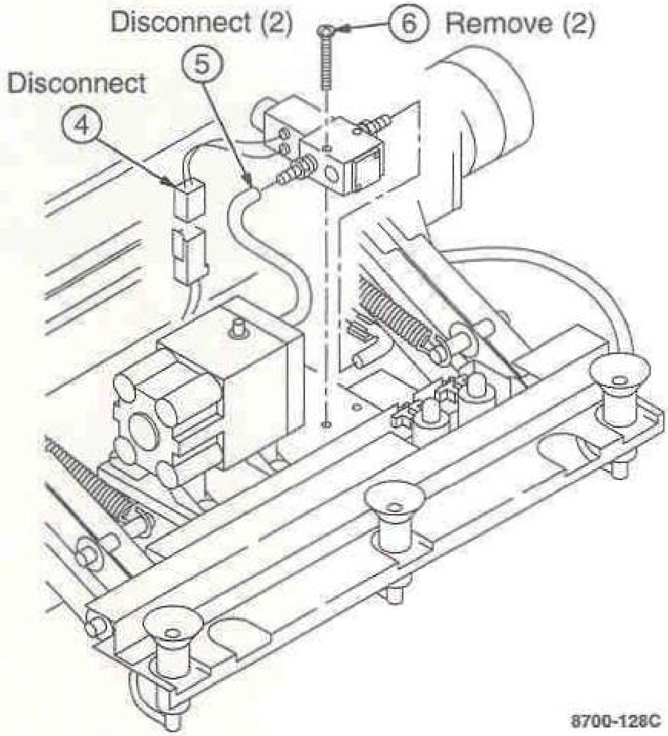

Disconnect (2)
⑥ Remove (2)
⑤
Disconnect
④
8700-128C

Figure 4-51.

4-5. Rollback Assembly

4-5-1. Rollback Module

1. Remove the supply cartridge.

⚠ WARNING

When the power cord is plugged in, hazardous voltages are present in some areas of the 8700. These voltages can cause severe injury or death.

2. Flip down the circuit breaker on the rear of the 8700, then unplug the power cord.
3. Remove the front panel (4-1-1).

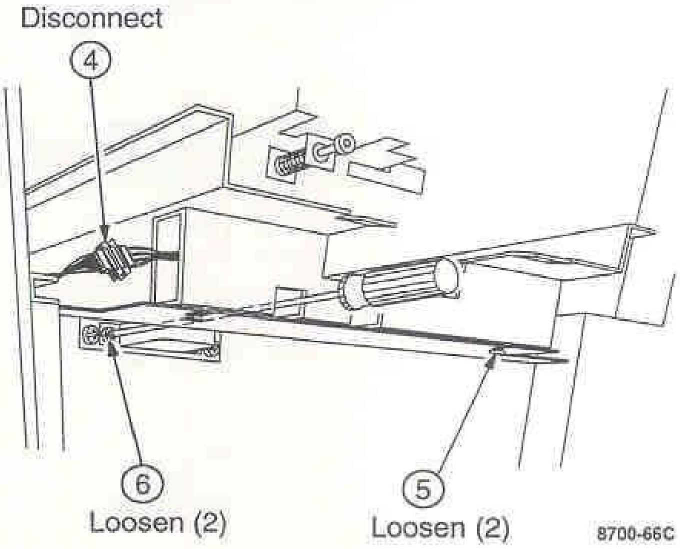


Figure 4-52.

Note

In Figure Figure 4-53, the front edge of the rollback module is raised up to provide a better view of the ribbon cable.

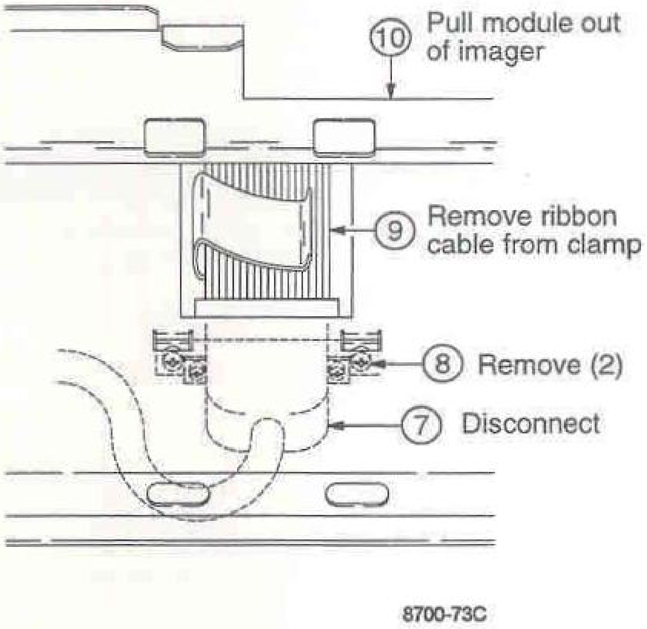

⑩ Pull module out of imager
⑨ Remove ribbon cable from clamp
⑧ Remove (2)
⑦ Disconnect
8700-73C

Figure 4-53.

4-5-2. Rollback Motor (M601)

1. Remove the supply cartridge.

⚠ WARNING

When the power cord is plugged in, hazardous voltages are present in some areas of the 8700. These voltages can cause severe injury or death.

2. Flip down the circuit breaker on the rear of the 8700, then unplug the power cord.
3. Remove the rollback module (4-5-1).

Note

When reassembling, be sure to line up the flat parts of the motor shaft and the rollback roller.

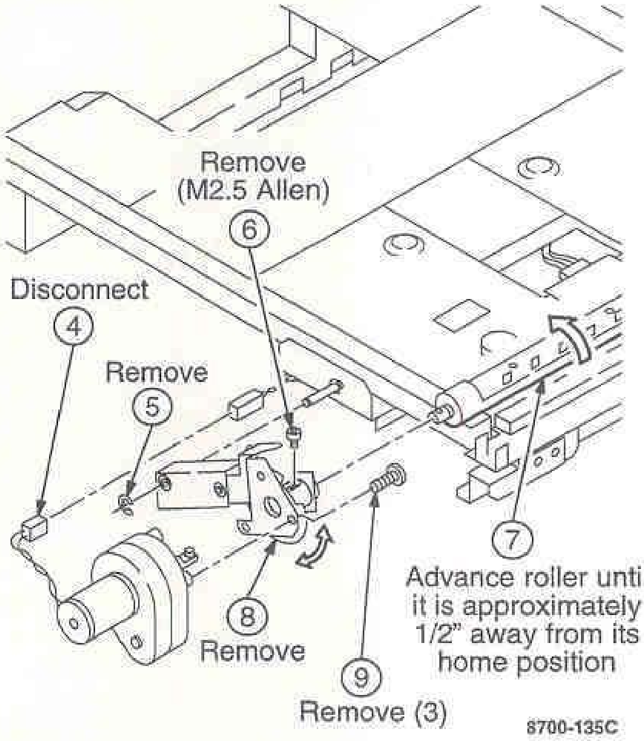

Remove
(M2.5 Allen)
⑥
Disconnect
④
Remove
⑤
⑦
Advance roller until it is approximately 1/2" away from its home position
⑧
Remove
⑨
Remove (3)
8700-135C

Figure 4-54.

4-5-3. Rollback Motor Home Sensor (SW601)

1. Remove the supply cartridge.

⚠ WARNING

When the power cord is plugged in, hazardous voltages are present in some areas of the 8700. These voltages can cause severe injury or death.

2. Flip down the circuit breaker on the rear of the 8700, then unplug the power cord.
3. Remove the rollback module (4-5-1).

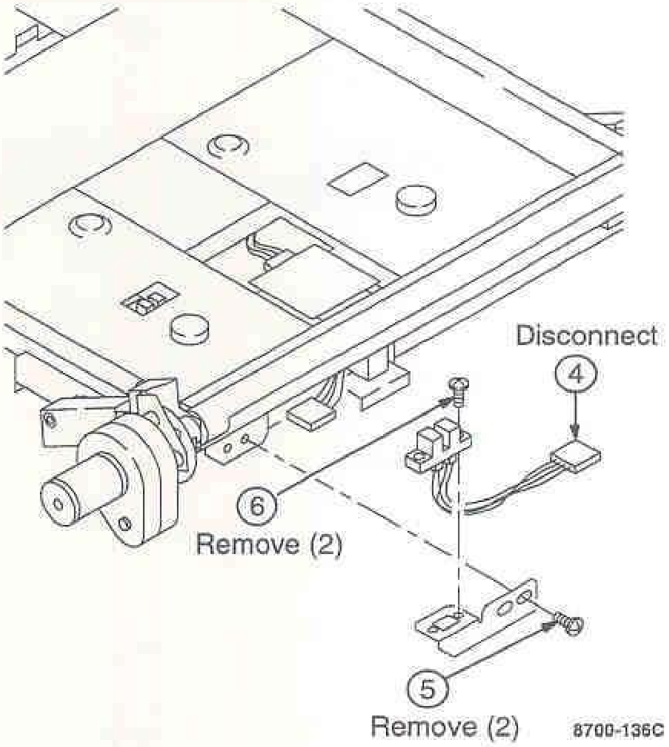


Figure 4-55.

4-5-4. Cartridge Open Sensor (SW603)

1. Remove the supply cartridge.

⚠ WARNING

When the power cord is plugged in, hazardous voltages are present in some areas of the 8700. These voltages can cause severe injury or death.

2. Flip down the circuit breaker on the rear of the 8700, then unplug the power cord.
3. Remove the rollback module (4-5-1).

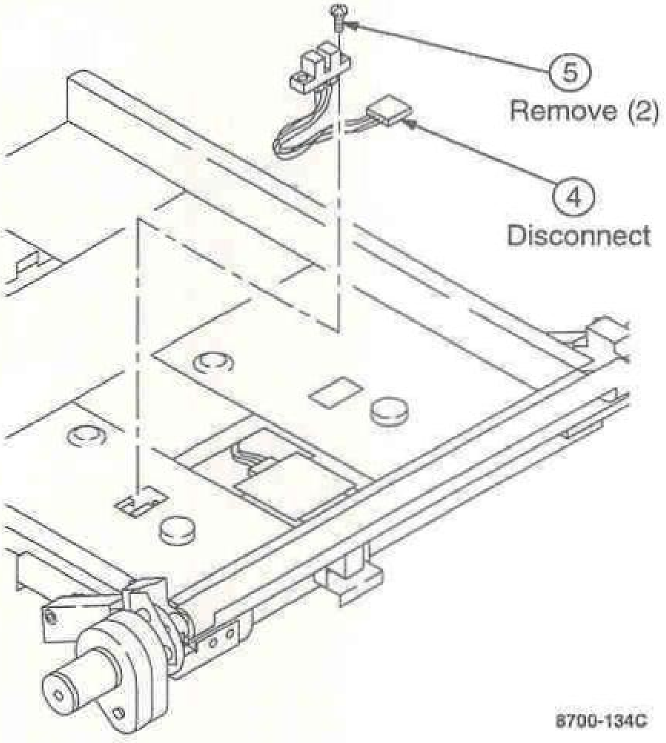


Figure 4-56.

4-5-5. Cartridge Present Sensor (SW604)

1. Remove the supply cartridge.

⚠ WARNING

When the power cord is plugged in, hazardous voltages are present in some areas of the 8700. These voltages can cause severe injury or death.

2. Flip down the circuit breaker on the rear of the 8700, then unplug the power cord.
3. Remove the rollback module (4-5-1).

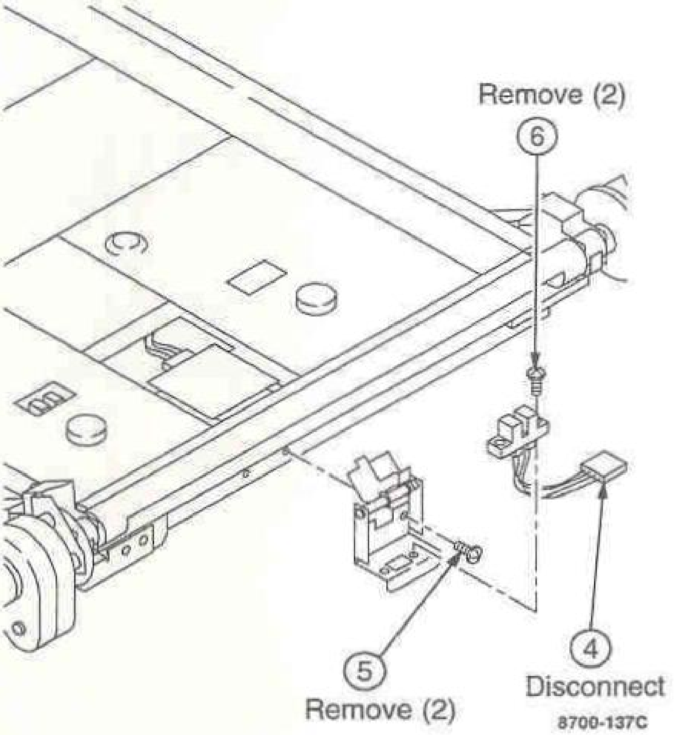


Figure 4-57.

4-5-6. Barcode Reader Board (BRB)

1. Remove the supply cartridge.

⚠ WARNING

When the power cord is plugged in, hazardous voltages are present in some areas of the 8700. These voltages can cause severe injury or death.

2. Flip down the circuit breaker on the rear of the 8700, then unplug the power cord.
3. Remove the rollback module (4-5-1).

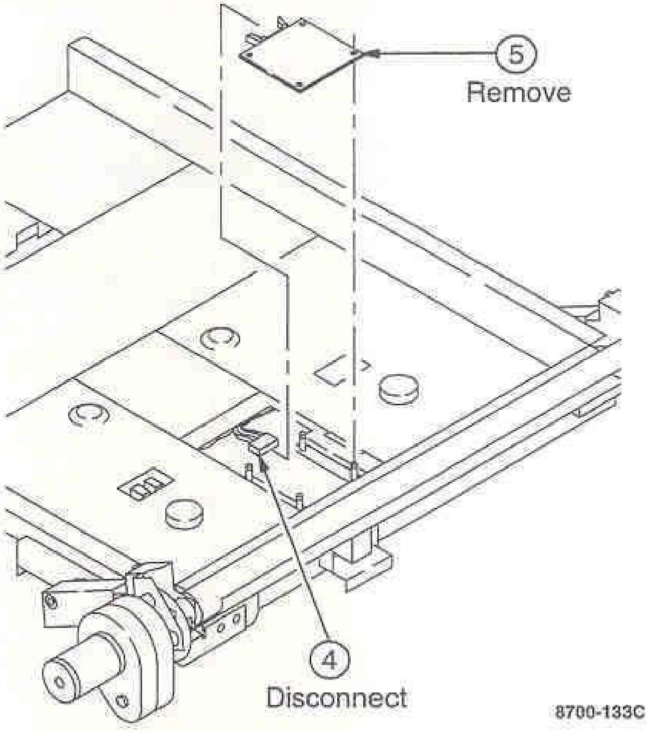


Figure 4-58.

4-6. Exposure Assembly

4-6-1. Platen and Optics Module

1. Remove the supply cartridge.

> **⚠ WARNING**
>
> When the power cord is plugged in, hazardous voltages are present in some areas of the 8700. These voltages can cause severe injury or death.

2. Flip down the circuit breaker on the rear of the 8700, then unplug the power cord.
3. Open the left side door.
4. Remove the front panel (4-1-1).

Note

When reassembling, be aware that the cables which connect to CN701 and CN702 on the optics module are easily reversed. The thicker cable connects to CN702.

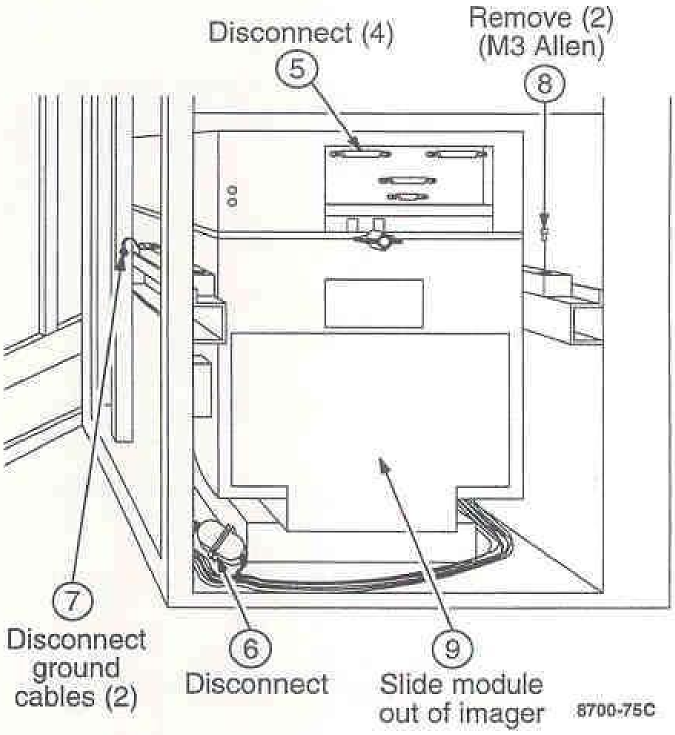
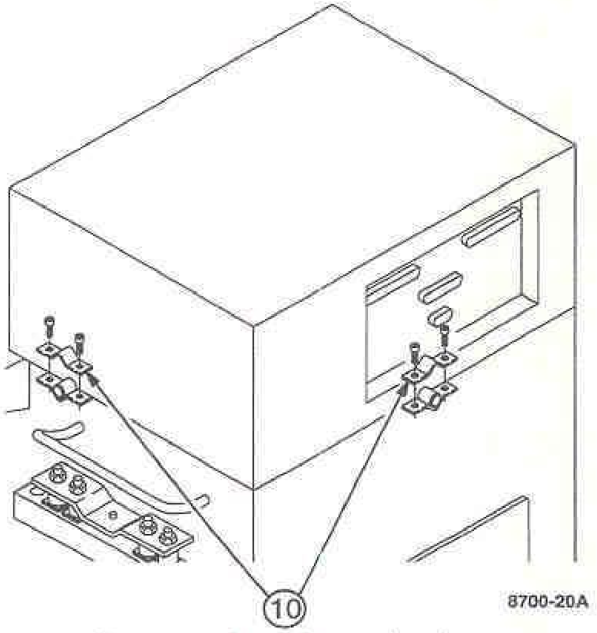

Disconnect (4)
⑤
Remove (2)
(M3 Allen)
⑧
⑦
Disconnect ground cables (2)
⑥
Disconnect
⑨
Slide module out of imager
8700-75C

Figure 4-59.



To separate platen and optics module, remove 3 brackets (M3 Allen)

Figure 4-60.

4-6-2. Platen Access Plate

1. Remove the supply cartridge.

⚠ WARNING

When the power cord is plugged in, hazardous voltages are present in some areas of the 8700. These voltages can cause severe injury or death.

2. Flip down the circuit breaker on the rear of the 8700, then unplug the power cord.
3. Remove the front panel (4-1-1).

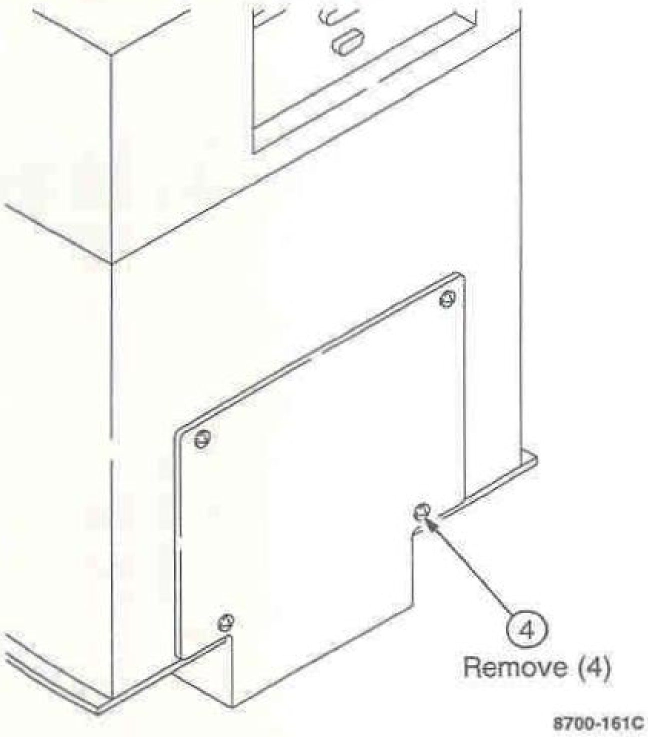


Figure 4-61.

4-6-3. Platen Bottom Sensor (SW701)

1. Remove the supply cartridge.

⚠ WARNING

When the power cord is plugged in, hazardous voltages are present in some areas of the 8700. These voltages can cause severe injury or death.

2. Flip down the circuit breaker on the rear of the 8700, then unplug the power cord.
3. Remove the platen module (4-6-1).
4. Remove the platen access plate (4-6-2).
5. Locate SW701 on the underside of the platen.

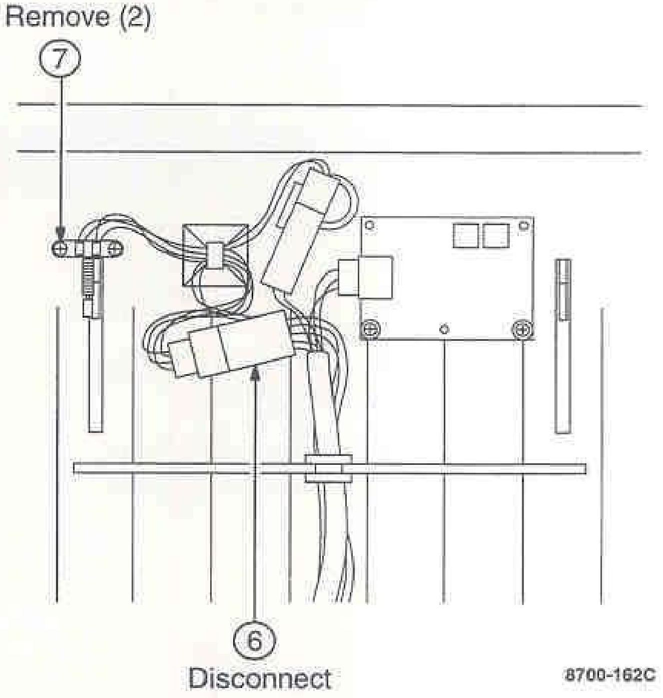


Figure 4-62.

4-6-4. Beam Power Board (BPB)

1. Remove the supply cartridge.

⚠ WARNING

When the power cord is plugged in, hazardous voltages are present in some areas of the 8700. These voltages can cause severe injury or death.

2. Flip down the circuit breaker on the rear of the 8700, then unplug the power cord.
3. Remove the platen module (4-6-1).
4. Remove the platen access plate (4-6-2).
5. Locate the BPB on the underside of the platen.

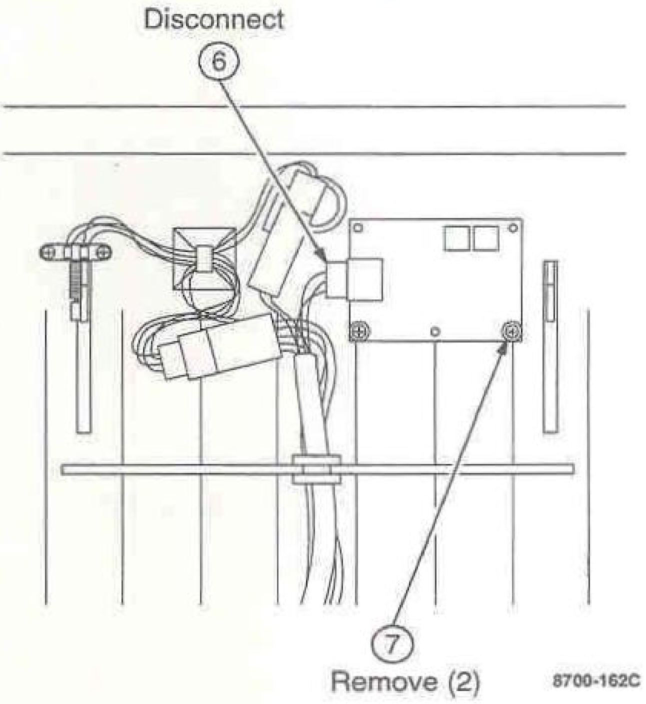


Figure 4-63.

4-6-5. Platen Kicker Solenoid (Y706)

1. Remove the supply cartridge.

> **⚠ WARNING**
>
> When the power cord is plugged in, hazardous voltages are present in some areas of the 8700. These voltages can cause severe injury or death.

2. Flip down the circuit breaker on the rear of the 8700, then unplug the power cord.
3. Remove the platen module (4-6-1).
4. Remove the platen access plate (4-6-2).

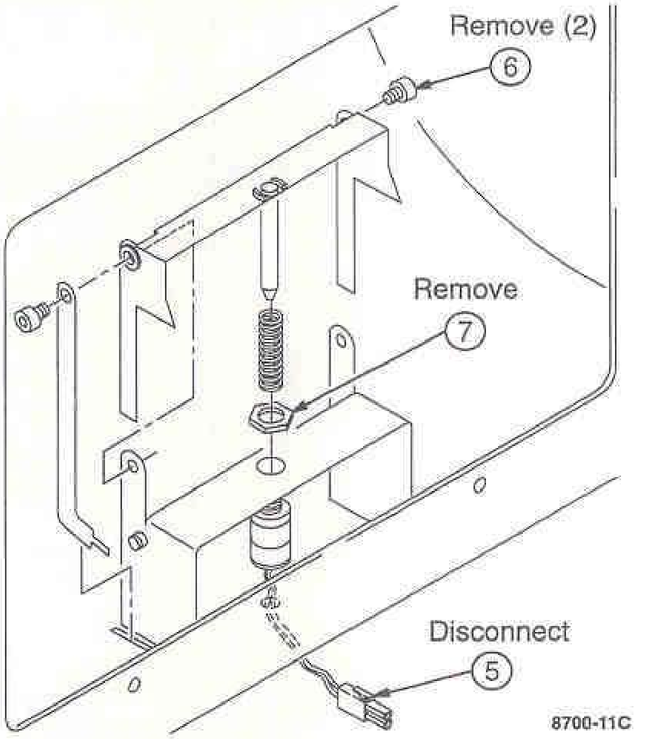


Figure 4-64.

4-6-6. Platen Door Interlock Sensor (SW703)

1. Remove the supply cartridge.

> **⚠ WARNING**
>
> When the power cord is plugged in, hazardous voltages are present in some areas of the 8700. These voltages can cause severe injury or death.

2. Flip down the circuit breaker on the rear of the 8700, then unplug the power cord.
3. Remove the front panel (4-1-1).
4. Remove the platen access plate (4-6-2).
5. Open the left side door.
6. Open the platen access door.

Note

When reassembling, ensure that SW703 is actuated when the platen access door is closed.

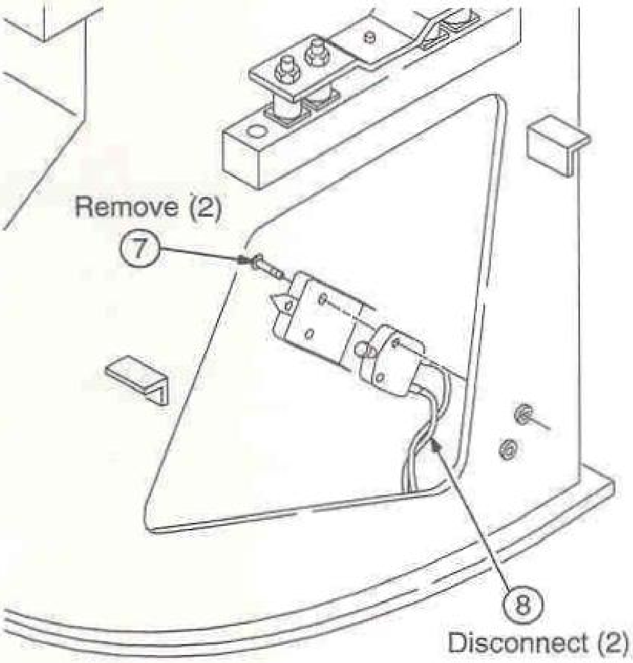


Figure 4-65.

4-6-7. Platen Top Solenoid (Y701)

1. Remove the supply cartridge.

⚠ WARNING

When the power cord is plugged in, hazardous voltages are present in some areas of the 8700. These voltages can cause severe injury or death.

2. Flip down the circuit breaker on the rear of the 8700, then unplug the power cord.
3. Remove the platen module (4-6-1).

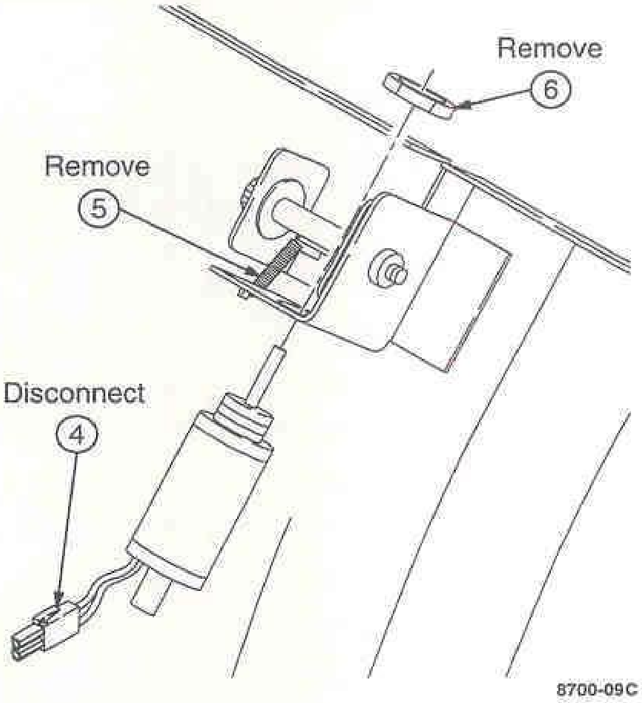


Figure 4-66.

4-6-8. Platen Alignment Solenoids (Y702 – Y705)

1. Remove the supply cartridge.

⚠ WARNING

When the power cord is plugged in, hazardous voltages are present in some areas of the 8700. These voltages can cause severe injury or death.

2. Flip down the circuit breaker on the rear of the 8700, then unplug the power cord.
3. Remove the platen module (4-6-1).

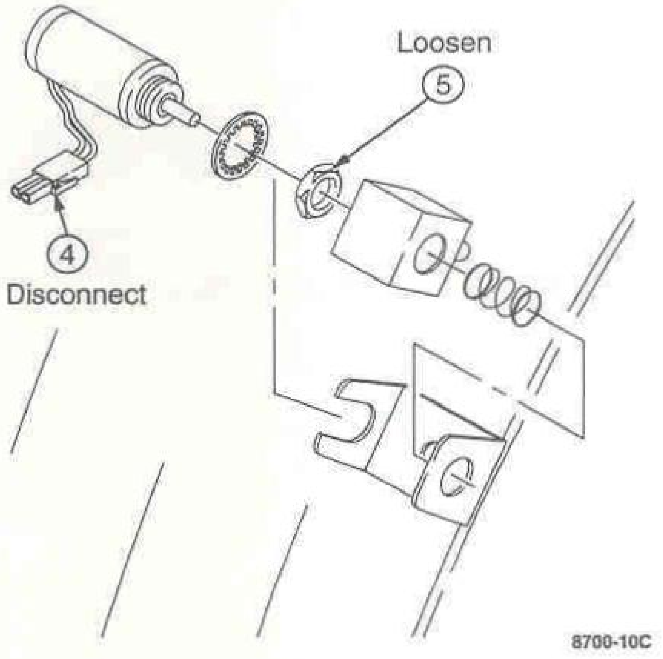


Figure 4-67.

4-7. Air Filtration System

4-7-1. Filtration Fan (M801)

1. Flip down the circuit breaker on the rear of the 8700, then unplug the power cord.

⚠ WARNING

When the power cord is plugged in, hazardous voltages are present in some areas of the 8700. These voltages can cause severe injury or death.

2. Unlatch and open the filter housing.

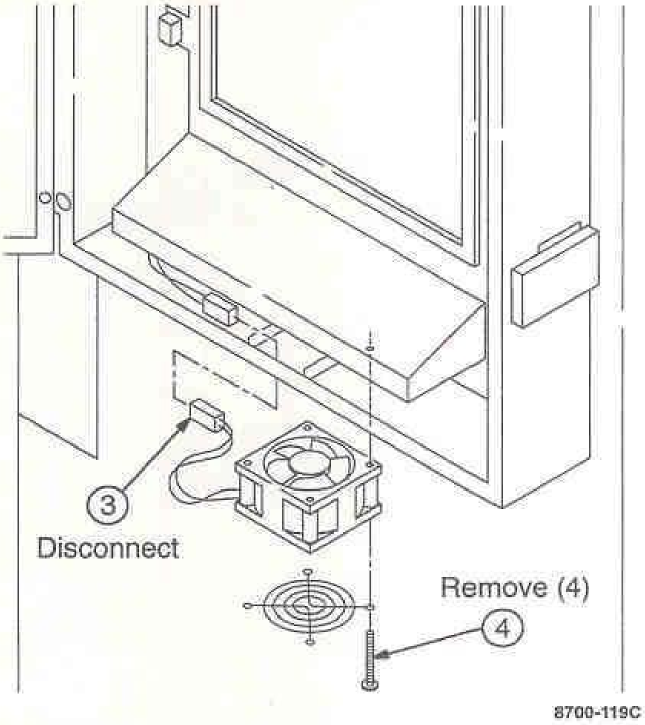


Figure 4-68.

4-7-2. Filter Present Switch (SW801)

1. Flip down the circuit breaker on the rear of the 8700, then unplug the power cord.

⚠ WARNING

When the power cord is plugged in, hazardous voltages are present in some areas of the 8700. These voltages can cause severe injury or death.

2. Unlatch and open the filter housing.

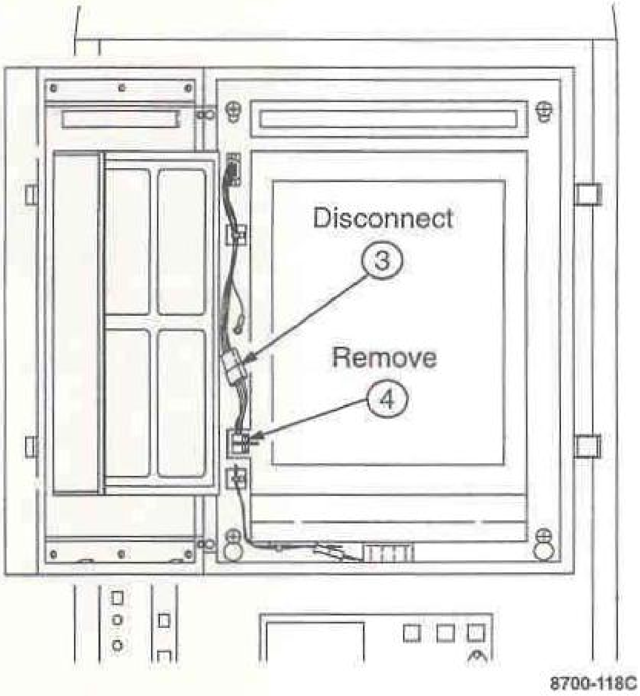


Figure 4-69.

4-8. Frame Mounted Parts

4-8-1. Power Distribution Board (PDB)

1. Remove the supply cartridge.

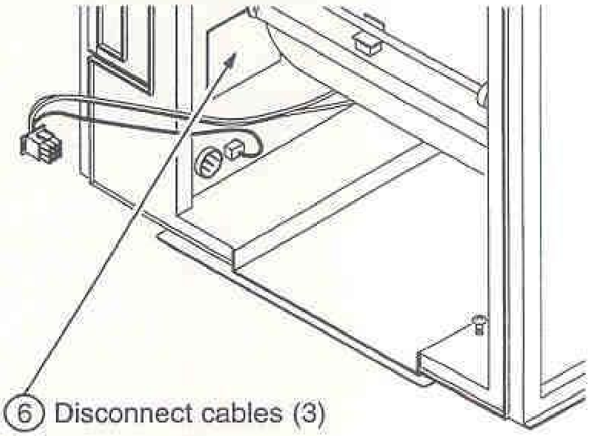
⚠ WARNING

When the power cord is plugged in, hazardous voltages are present in some areas of the 8700. These voltages can cause severe injury or death.

2. Flip down the circuit breaker on the rear of the 8700, then unplug the power cord.
3. Remove the power module (4-9-1).
4. Remove the platen and optics module (4-6-1).
5. Slide the transport module out of the 8700.

⚠ Caution

To avoid damage to sensitive electronic components, always wear an anti-static strap when handling PWAs or EPROMs.



⑥ Disconnect cables (3)

⑦ Remove screws (4)

Figure 4-70.

4-8-2. Processor Power Relay (K801)

1. Remove the supply cartridge.

⚠ WARNING

When the power cord is plugged in, hazardous voltages are present in some areas of the 8700. These voltages can cause severe injury or death.

2. Flip down the circuit breaker on the rear of the 8700, then unplug the power cord.
3. Remove the rear panel (4-1-2).

Note

When reassembling, check the labels on the wires to ensure that they are connected to the correct terminals. The terminal numbers are marked on the relay.

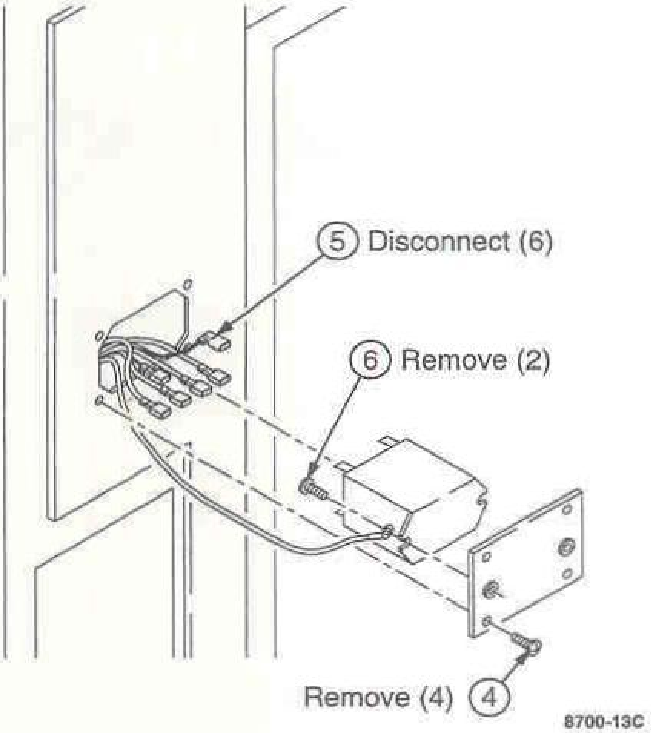


Figure 4-71.

4-8-3. Local Panel

⚠ WARNING

When the power cord is plugged in, hazardous voltages are present in some areas of the 8700. These voltages can cause severe injury or death.

1. Flip down the circuit breaker on the rear of the 8700, then unplug the power cord.
2. Raise the top cover of the 8700.

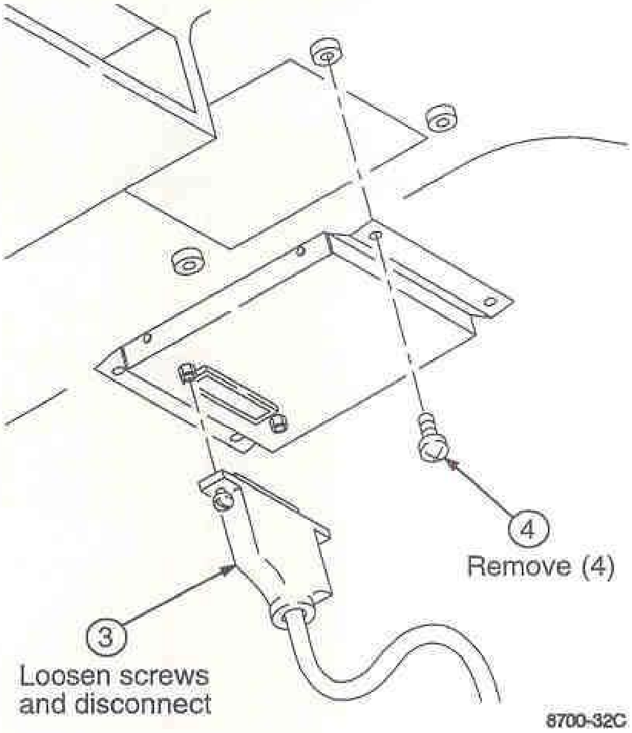

④
Remove (4)
③
Loosen screws
and disconnect
8700-32C

Figure 4-72.

4-8-4. Top Cover Interlock (SW802)

⚠ WARNING

When the power cord is plugged in, hazardous voltages are present in some areas of the 8700. These voltages can cause severe injury or death.

1. Flip down the circuit breaker on the rear of the 8700, then unplug the power cord.
2. Raise the top cover of the 8700.
3. Lift the handle on the front of the processor/exit assembly, and slide the assembly out of the 8700.

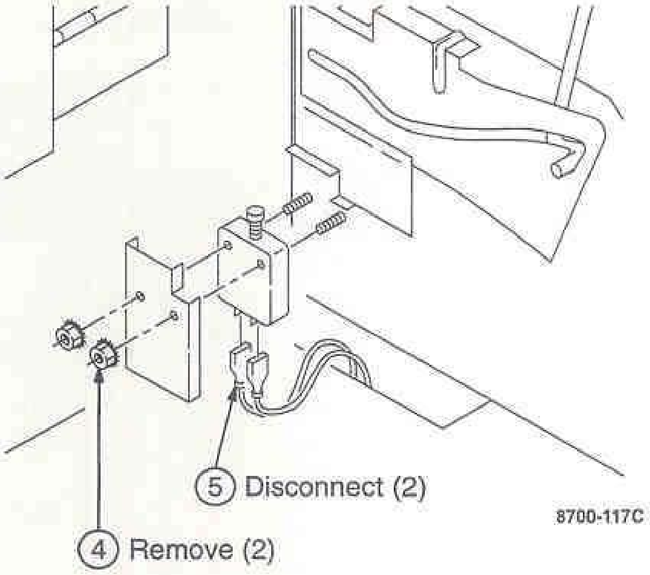


Figure 4-73.

4-8-5. Left Door Machine Interlock (SW803)

1. Remove the supply cartridge.

⚠ WARNING

When the power cord is plugged in, hazardous voltages are present in some areas of the 8700. These voltages can cause severe injury or death.

2. Flip down the circuit breaker on the rear of the 8700, then unplug the power cord.
3. Open the left door.

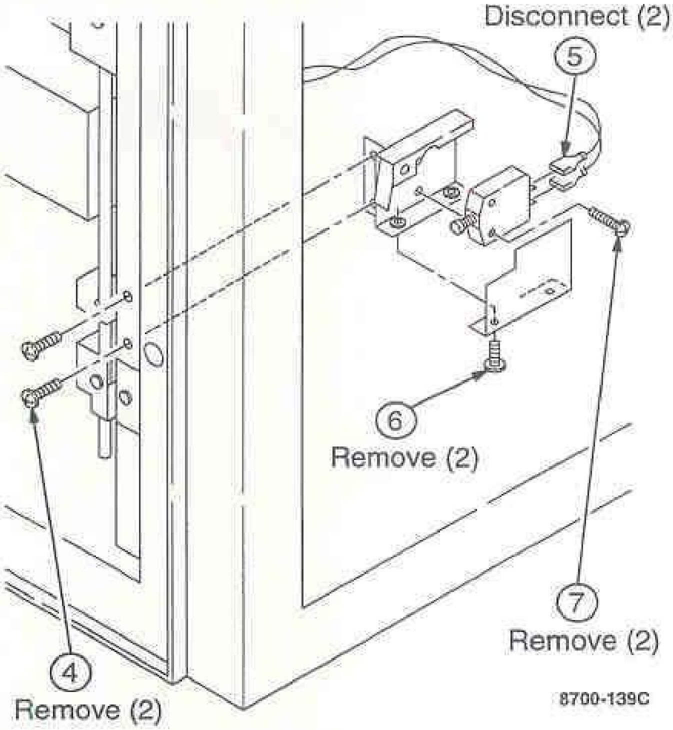

Disconnect (2)
5
6
Remove (2)
7
Remove (2)
4
Remove (2)
8700-139C

Figure 4-74.

4-8-6. Left Door Laser Interlock (SW804)

1. Remove the supply cartridge.

⚠ WARNING

When the power cord is plugged in, hazardous voltages are present in some areas of the 8700. These voltages can cause severe injury or death.

2. Flip down the circuit breaker on the rear of the 8700, then unplug the power cord.
3. Open the left door.

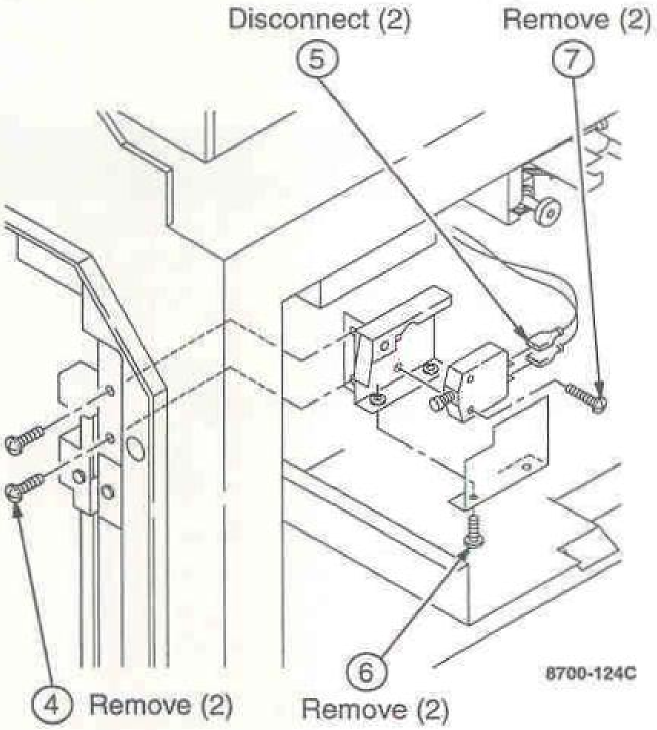

Disconnect (2)
⑤
Remove (2)
⑦
④ Remove (2)
⑥
Remove (2)
8700-124C

Figure 4-75.

4-8-7. Power Switch (SW805)

1. Remove the supply cartridge.

⚠ WARNING

When the power cord is plugged in, hazardous voltages are present in some areas of the 8700. These voltages can cause severe injury or death.

2. Flip down the circuit breaker on the rear of the 8700, then unplug the power cord.
3. Remove the right side panel (4-1-3).

Note

When reassembling, check the labels on the wires to ensure that they are connected to the correct terminals. The detail balloon in Figure Figure 4-76 indicates the terminal numbers.

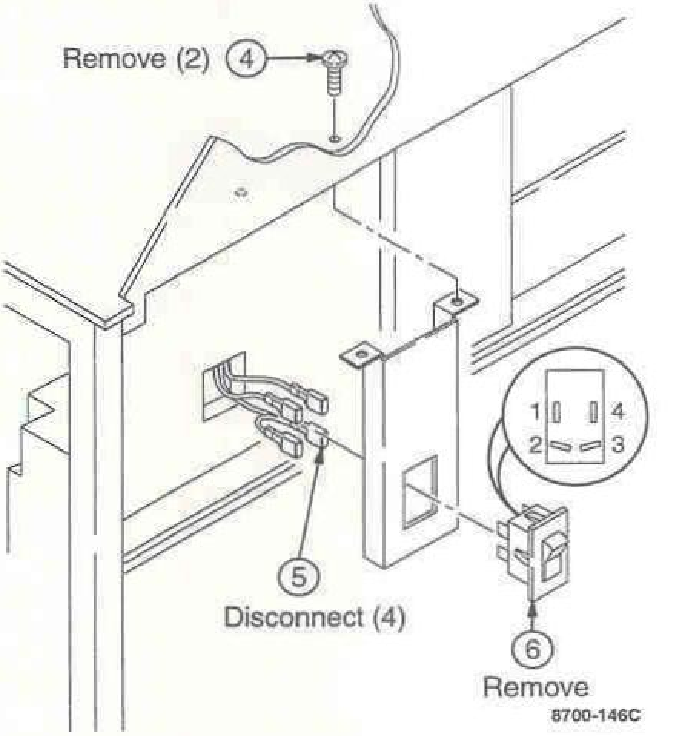


Figure 4-76.

4-8-8. Supply Door Interlock (SW806)

1. Remove the supply cartridge.

> **⚠ WARNING**
>
> When the power cord is plugged in, hazardous voltages are present in some areas of the 8700. These voltages can cause severe injury or death.

2. Flip down the circuit breaker on the rear of the 8700, then unplug the power cord.
3. Remove the front panel (4-1-1).

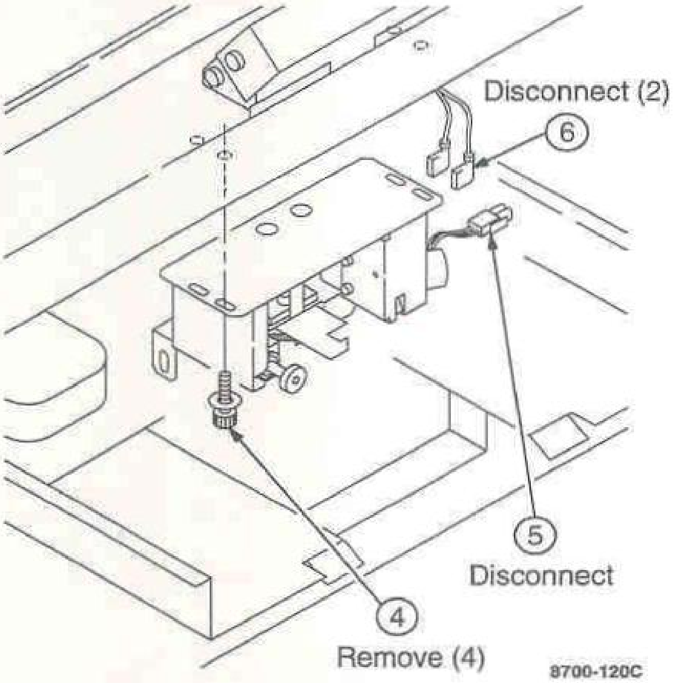

Disconnect (2)
⑥
⑤
Disconnect
④
Remove (4)
8700-120C

Figure 4-77.

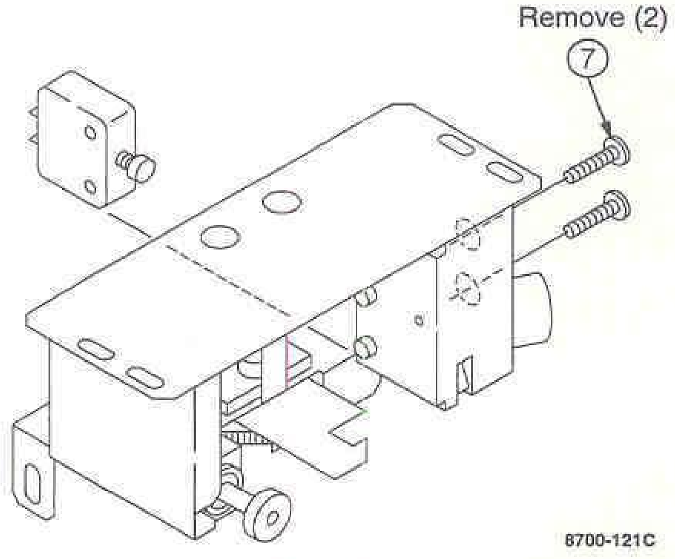

Remove (2)
7
8700-121C

Figure 4-78.

4-8-9. Supply Door Solenoid (Y801)

1. Remove the supply cartridge.

> **⚠ WARNING**
>
> When the power cord is plugged in, hazardous voltages are present in some areas of the 8700. These voltages can cause severe injury or death.

2. Flip down the circuit breaker on the rear of the 8700, then unplug the power cord.
3. Remove the front panel (4-1-1).

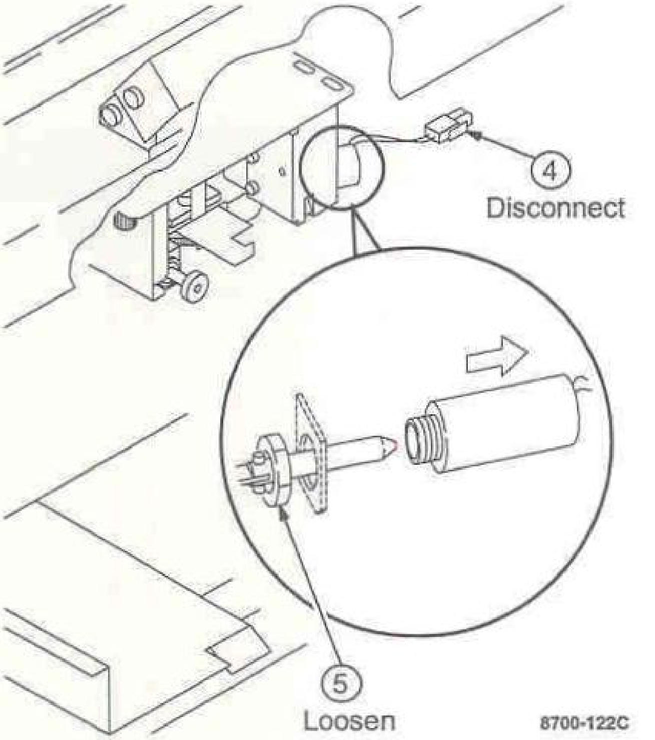


Figure 4-79.

4-8-10. Left Door Solenoid (Y802)

1. Remove the supply cartridge.

⚠ WARNING

When the power cord is plugged in, hazardous voltages are present in some areas of the 8700. These voltages can cause severe injury or death.

2. Flip down the circuit breaker on the rear of the 8700, then unplug the power cord.
3. Open the left door.

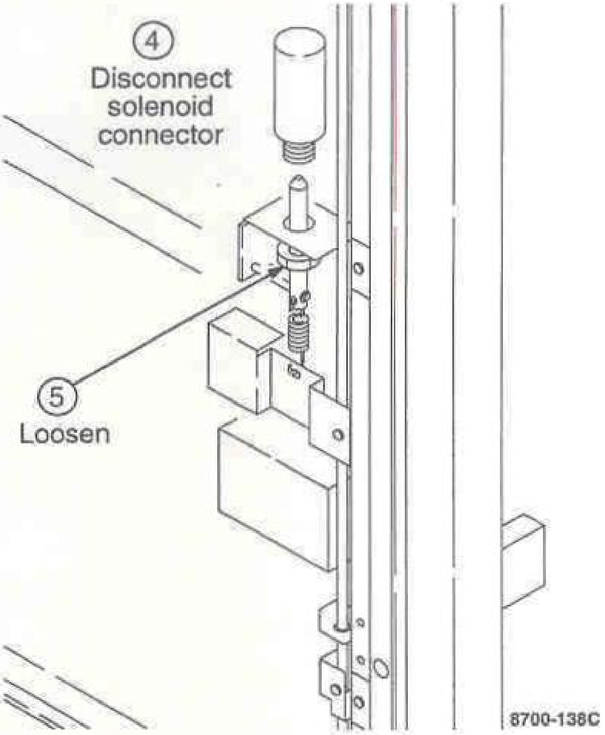

④
Disconnect solenoid connector
⑤
Loosen
8700-138C

Figure 4-80.

4-8-11. Service Switch

1. Remove the supply cartridge.

⚠ WARNING

When the power cord is plugged in, hazardous voltages are present in some areas of the 8700. These voltages can cause severe injury or death.

2. Flip down the circuit breaker on the rear of the 8700, then unplug the power cord.
3. Remove the right side panel (4-1-3).
4. Remove the electronics enclosure cover (4-1-4).

Note

When reassembling, check the labels on the wires to ensure that they are connected to the correct terminals. The terminal numbers are marked on the side of the switch.

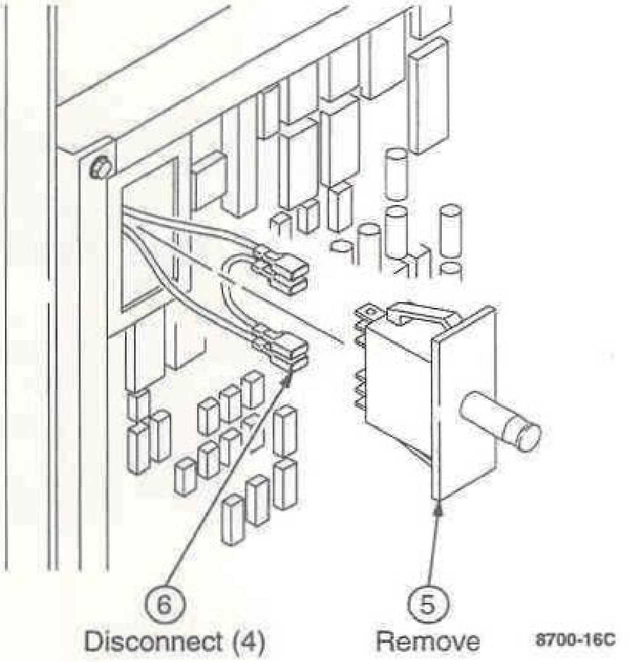


Figure 4-81.

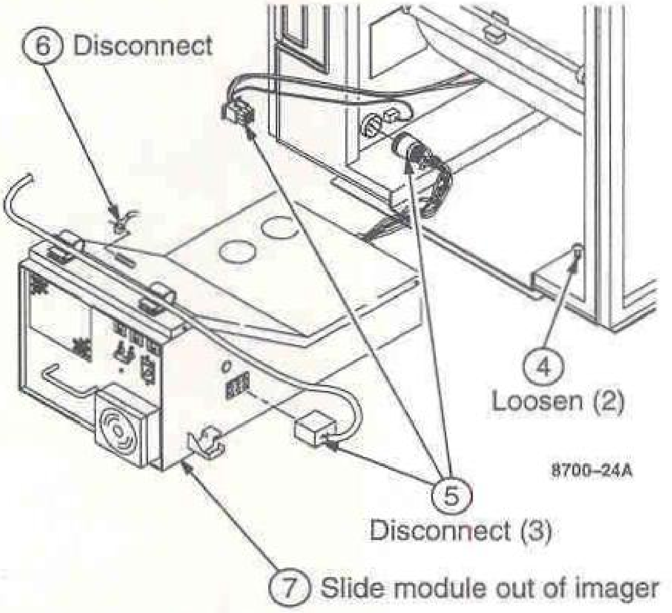
4-9. Power Module Assembly

4-9-1. Power Module

1. Remove the supply cartridge.

> **⚠ WARNING**
>
> When the power cord is plugged in, hazardous voltages are present in some areas of the 8700. These voltages can cause severe injury or death.

2. Flip down the circuit breaker on the rear of the 8700, then unplug the power cord.
3. Remove the rear panel (4-1-2).



⑥ Disconnect
④ Loosen (2)
8700–24A
⑤ Disconnect (3)
⑦ Slide module out of imager

Figure 4-82.

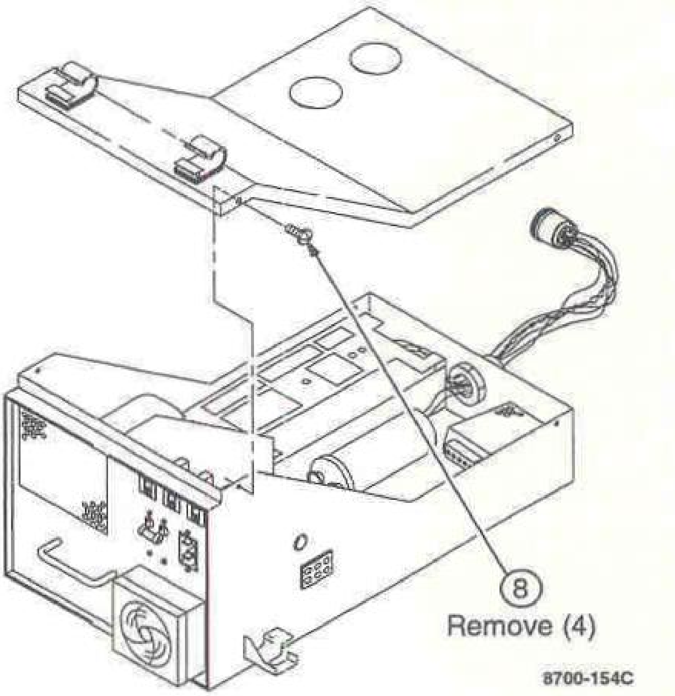

8
Remove (4)
8700-154C

Figure 4-83.

4-9-2. Filter Capacitor (C901) and Varister (V901)

1. Remove the supply cartridge.

⚠ WARNING

When the power cord is plugged in, hazardous voltages are present in some areas of the 8700. These voltages can cause severe injury or death.

2. Flip down the circuit breaker on the rear of the 8700, then unplug the power cord.
3. Remove the power module (4-9-1).

Note

When reassembling, ensure that the wires are connected to the correct terminals. If in doubt, refer to the schematic located on the underside of the power supply cover.

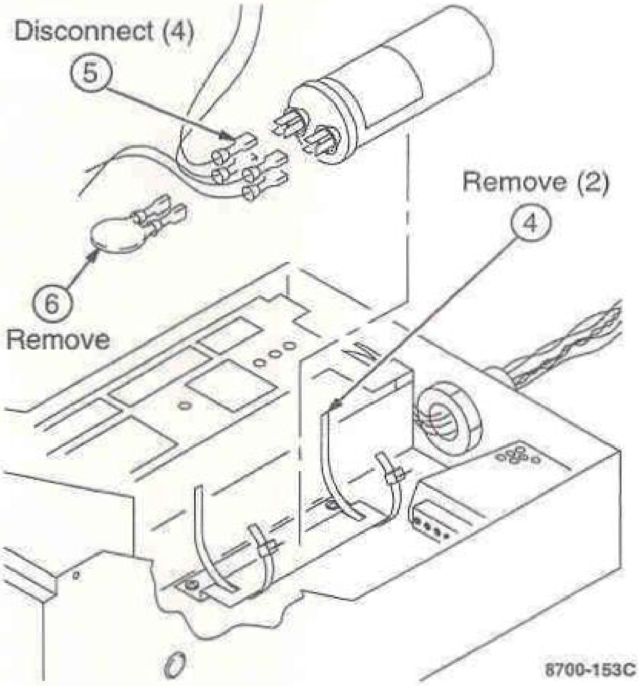


Figure 4-84.

4-9-3. Input Circuit Breaker (CB901)

1. Remove the supply cartridge.

⚠ WARNING

When the power cord is plugged in, hazardous voltages are present in some areas of the 8700. These voltages can cause severe injury or death.

2. Flip down the circuit breaker on the rear of the 8700, then unplug the power cord.
3. Remove the power module (4-9-1).

Note

When reassembling, check the labels on the wires to ensure that they are connected to the correct terminals. The terminal numbers are marked on the circuit breaker.

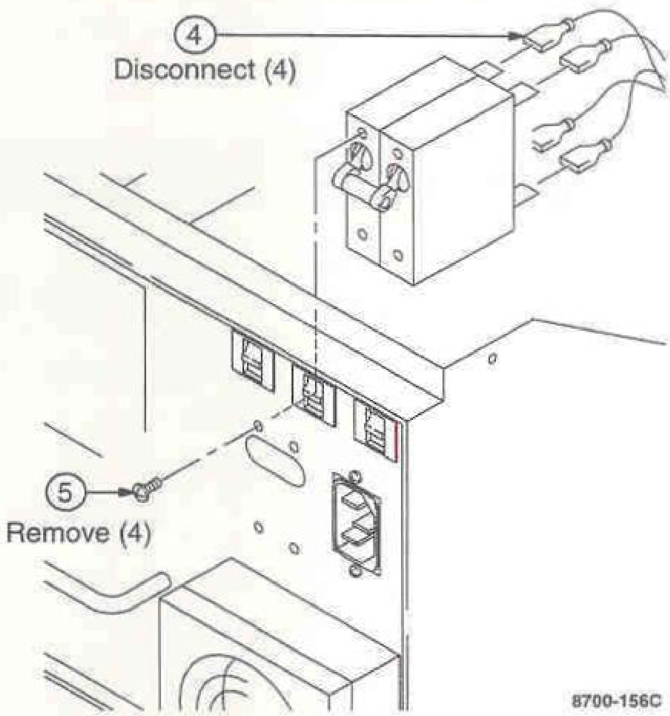


Figure 4-85.

4-9-4. Processor Circuit Breaker (CB902)

1. Remove the supply cartridge.

⚠ WARNING

When the power cord is plugged in, hazardous voltages are present in some areas of the 8700. These voltages can cause severe injury or death.

2. Flip down the circuit breaker on the rear of the 8700, then unplug the power cord.
3. Remove the power module (4-9-1).

Note

When reassembling, ensure that the wires are connected to the correct terminals. If in doubt, refer to the schematic located on the underside of the power supply cover. (When the circuit breaker is mounted right side up, terminal 1 is the upper terminal.)

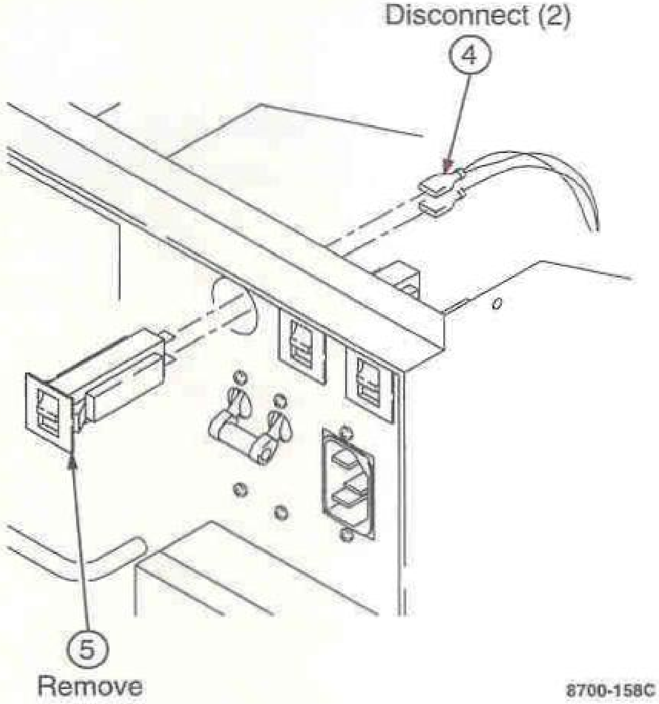


Figure 4-86.

4-9-5. Power Supply, Cooling Fans, and Vaccum Pump Circuit Breaker (CB903)

1. Remove the supply cartridge.

> **⚠ WARNING**
>
> When the power cord is plugged in, hazardous voltages are present in some areas of the 8700. These voltages can cause severe injury or death.

2. Flip down the circuit breaker on the rear of the 8700, then unplug the power cord.
3. Remove the power module (4-9-1).

Note

When reassembling, ensure that the wires are connected to the correct terminals. If in doubt, refer to the schematic located on the underside of the power supply cover. (When the circuit breaker is mounted right side up, terminal 1 is the upper terminal.)

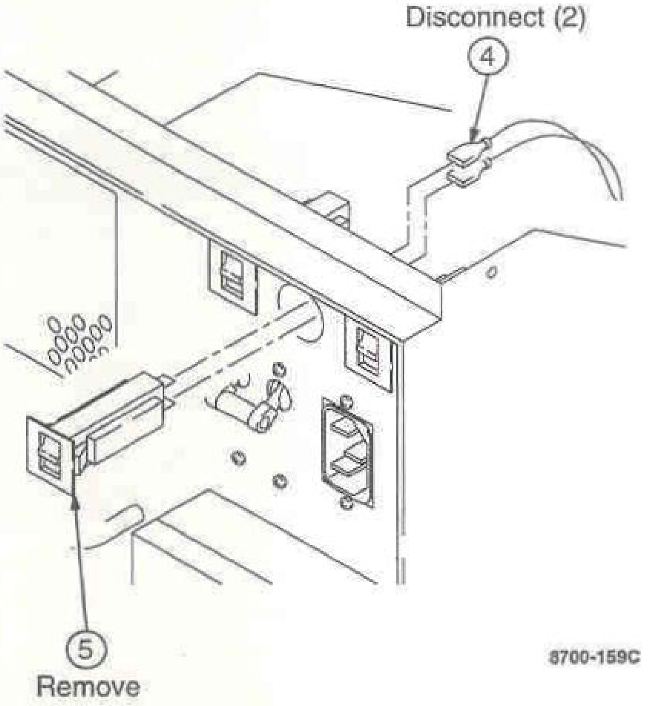


Figure 4-87.

4-9-6. 24 VAC Circuit Breaker (CB904)

1. Remove the supply cartridge.

⚠ WARNING

When the power cord is plugged in, hazardous voltages are present in some areas of the 8700. These voltages can cause severe injury or death.

2. Flip down the circuit breaker on the rear of the 8700, then unplug the power cord.
3. Remove the power module (4-9-1).

Note

When reassembling, ensure that the wires are connected to the correct terminals. If in doubt, refer to the schematic located on the underside of the power supply cover. (When the circuit breaker is mounted right side up, terminal 1 is the upper terminal.)

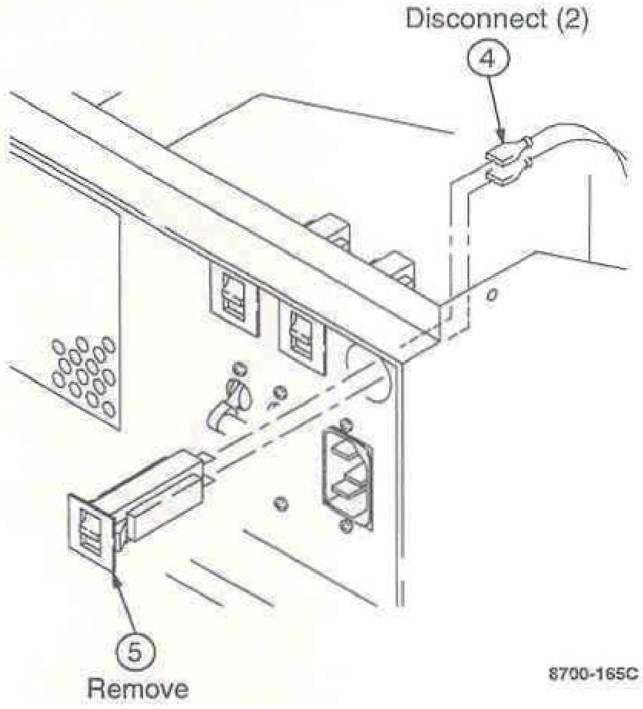


Figure 4-88.

4-9-7. Line Filter (LF901)

1. Remove the supply cartridge.

> **⚠ WARNING**
>
> When the power cord is plugged in, hazardous voltages are present in some areas of the 8700. These voltages can cause severe injury or death.

2. Flip down the circuit breaker on the rear of the 8700, then unplug the power cord.
3. Remove the power module (4-9-1).

Note

When reassembling, check the labels on the wires to ensure that they are connected to the correct terminals. The terminal numbers are marked on the line filter.

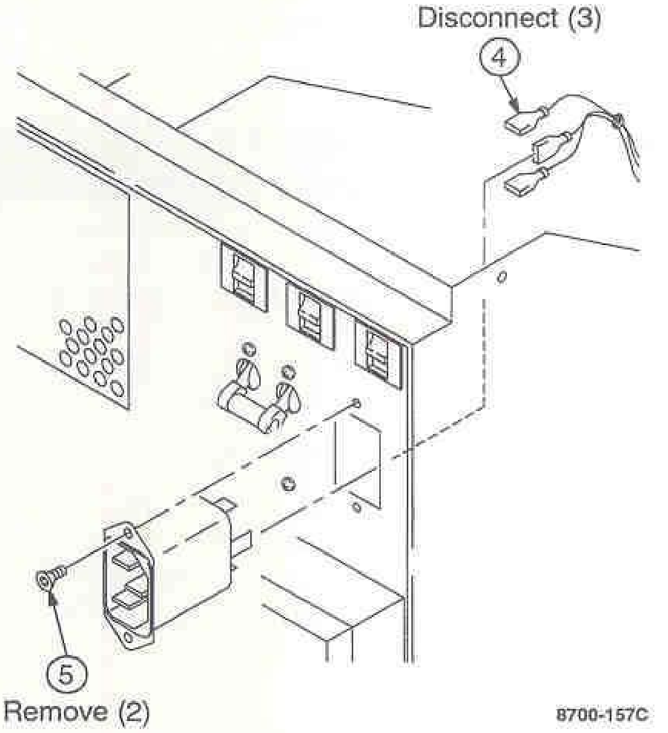


Figure 4-89.

4-9-8. Power Latch Relay (K901)

1. Remove the supply cartridge.

> **⚠ WARNING**
>
> When the power cord is plugged in, hazardous voltages are present in some areas of the 8700. These voltages can cause severe injury or death.

2. Flip down the circuit breaker on the rear of the 8700, then unplug the power cord.
3. Remove the power module (4-9-1).

Note

When reassembling, check the labels on the wires to ensure that they are connected to the correct terminals. The terminal numbers are marked on the relay.

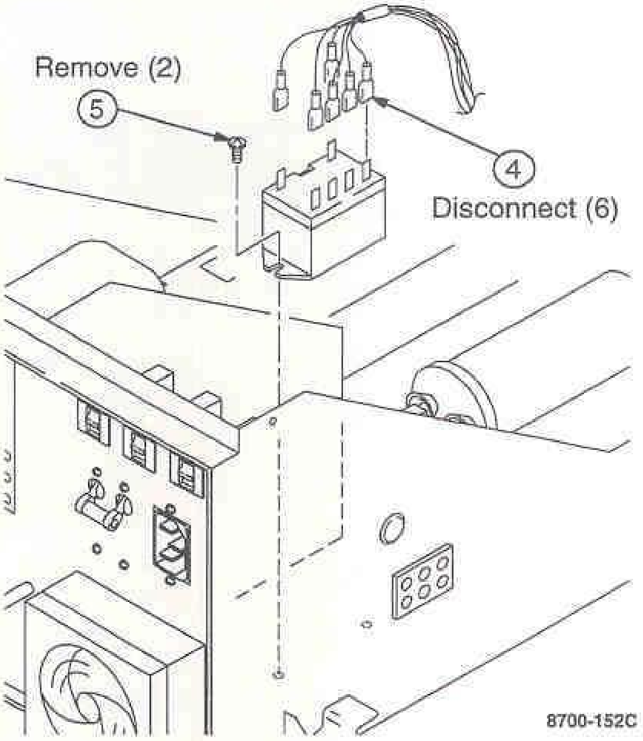


Figure 4-90.

4-9-9. Cooling Fan Motor (M901)

⚠ WARNING

When the power cord is plugged in, hazardous voltages are present in some areas of the 8700. These voltages can cause severe injury or death.

1. Flip down the circuit breaker on the rear of the 8700, then unplug the power cord.

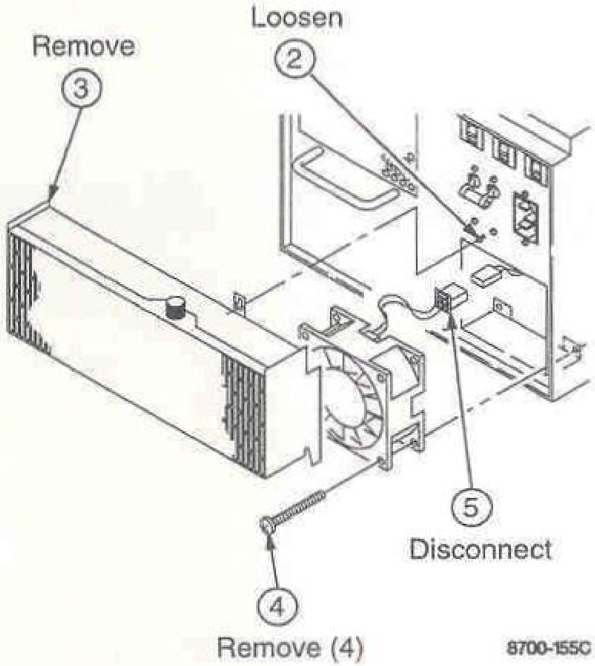

Loosen
②
Remove
③
⑤
Disconnect
④
Remove (4)
8700-155C

Figure 4-91.

4-9-10. +5, ±17, and +24 VDC Power Supply (PS901)

1. Remove the supply cartridge.

WARNING

When the power cord is plugged in, hazardous voltages are present in some areas of the 8700. These voltages can cause severe injury or death.

2. Flip down the circuit breaker on the rear of the 8700, then unplug the power cord.
3. Remove the power module (4-9-1).

Note

When reassembling, check the labels on the wires to ensure that they are connected to the correct terminals. The terminal numbers are marked on the power supply.

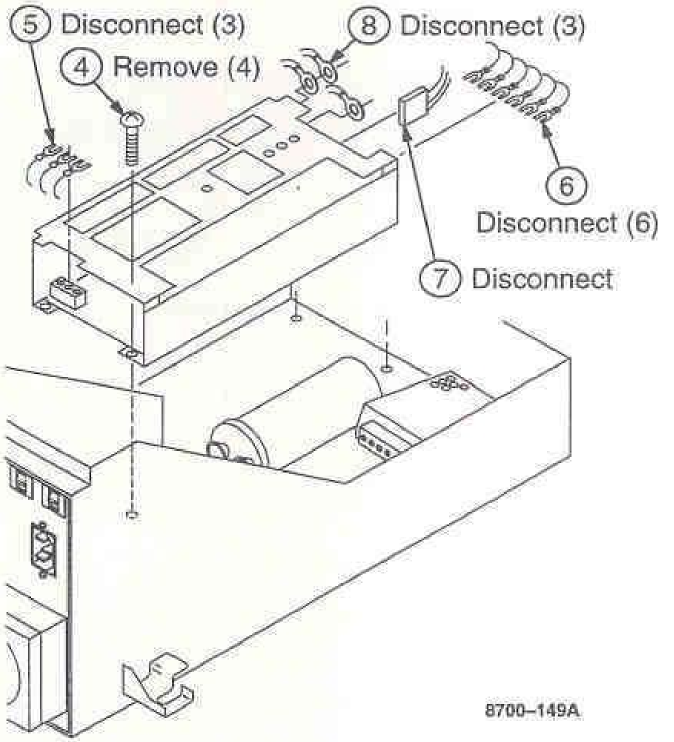

⑤ Disconnect (3)
⑧ Disconnect (3)
④ Remove (4)
⑥ Disconnect (6)
⑦ Disconnect
8700–149A

Figure 4-92.

4-9-11. –5.2 VDC Power Supply (PS902)

1. Remove the supply cartridge.

⚠ WARNING

When the power cord is plugged in, hazardous voltages are present in some areas of the 8700. These voltages can cause severe injury or death.

2. Flip down the circuit breaker on the rear of the 8700, then unplug the power cord.
3. Remove the power module (4-9-1).

Note

When reassembling, check the labels on the wires to ensure that they are connected to the correct terminals. The terminal numbers are marked on the power supply.

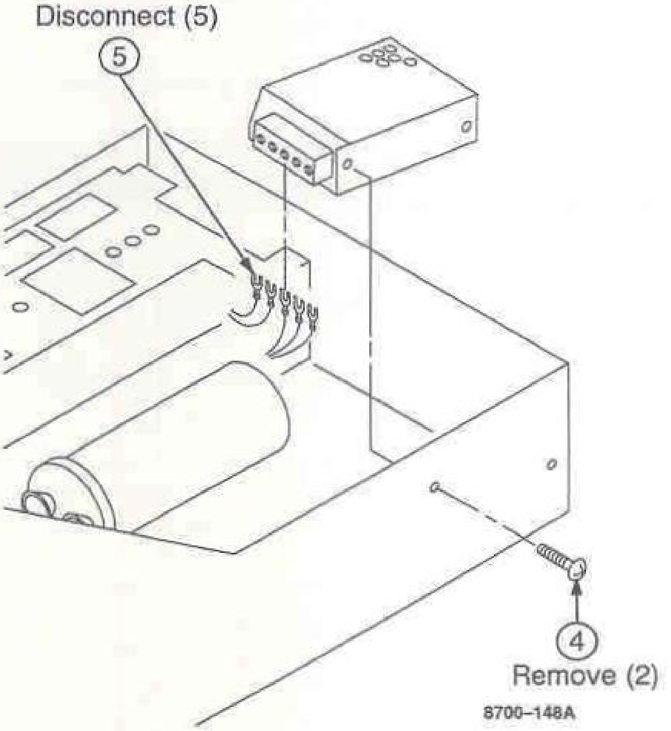


Figure 4-93.

4-10. Electronics Enclosure

4-10-1. Translator Daughter Board (TDB)

⚠ WARNING

When the power cord is plugged in, hazardous voltages are present in some areas of the 8700. These voltages can cause severe injury or death.

1. Flip down the circuit breaker on the rear of the 8700, then unplug the power cord.

⚠ Caution

To avoid damage to sensitive electronic components, always wear an anti-static strap when handling PWAs or EPROMs.

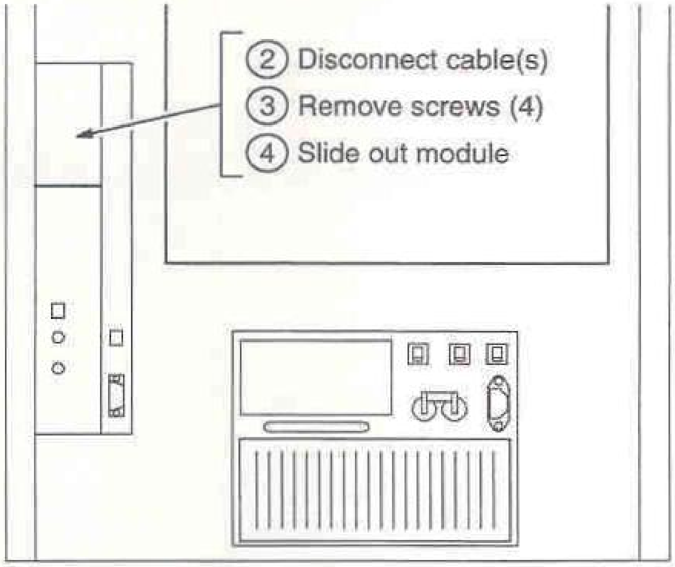

② Disconnect cable(s)
③ Remove screws (4)
④ Slide out module

Figure 4-94.

4-10-2. Interface Boards (DIB/FIB/SIB/VIB)

⚠ WARNING

When the power cord is plugged in, hazardous voltages are present in some areas of the 8700. These voltages can cause severe injury or death.

1. Flip down the circuit breaker on the rear of the 8700, then unplug the power cord.

⚠ Caution

To avoid damage to sensitive electronic components, always wear an anti-static strap when handling PWAs or EPROMs.

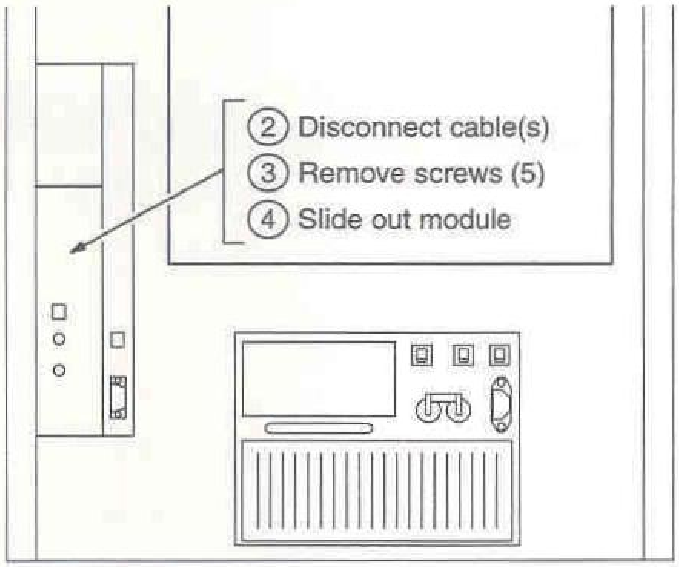

② Disconnect cable(s)
③ Remove screws (5)
④ Slide out module

Figure 4-95.

4-10-3. Image Processor Board (IPB)

⚠ WARNING

When the power cord is plugged in, hazardous voltages are present in some areas of the 8700. These voltages can cause severe injury or death.

1. Flip down the circuit breaker on the rear of the 8700, then unplug the power cord.
2. Remove the right side panel (4-1-3).
3. Remove the electronics enclosure cover (4-1-4).

⚠ Caution

To avoid damage to sensitive electronic components, always wear an anti-static strap when handling PWAs or EPROMs.

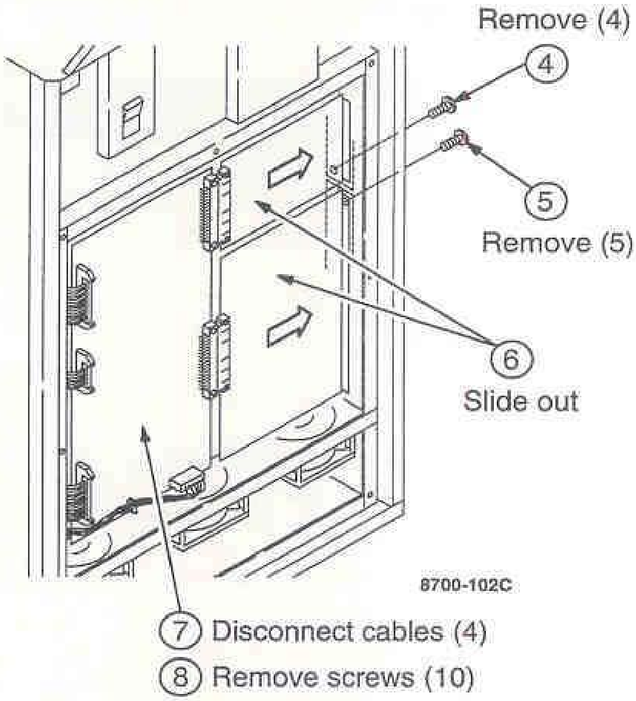

Remove (4)
④
⑤
Remove (5)
⑥
Slide out
8700-102C
⑦ Disconnect cables (4)
⑧ Remove screws (10)

Figure 4-96.

4-10-4. Memory Daughter Board (MDB)

⚠ WARNING

When the power cord is plugged in, hazardous voltages are present in some areas of the 8700. These voltages can cause severe injury or death.

1. Flip down the circuit breaker on the rear of the 8700, then unplug the power cord.
2. Remove the right side panel (4-1-3).
3. Remove the electronics enclosure cover (4-1-4).

⚠ Caution

To avoid damage to sensitive electronic components, always wear an anti-static strap when handling PWAs or EPROMs.

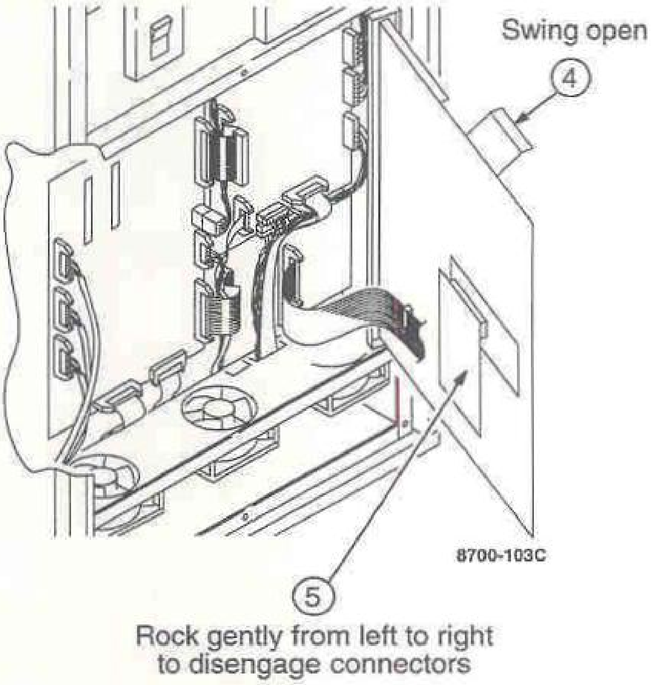

Swing open
④
8700-103C
⑤
Rock gently from left to right
to disengage connectors

Figure 4-97.

4-10-5. System Controller Board (SCB)

1. Connect the MPC to the MPC port on the rear of the 8700.
2. Power up the MPC and start the MPC for Windows program.
3. Do either of the following to select the SCB subsystem:
    - Click on the SCB button.
    - Open the Operations menu, and select Subsystem→SCB.
4. Select the Config button to display the 8700 Imager Setup window.
5. Note the Total Prints count, and the Maximum Pickup Retries and Language settings.

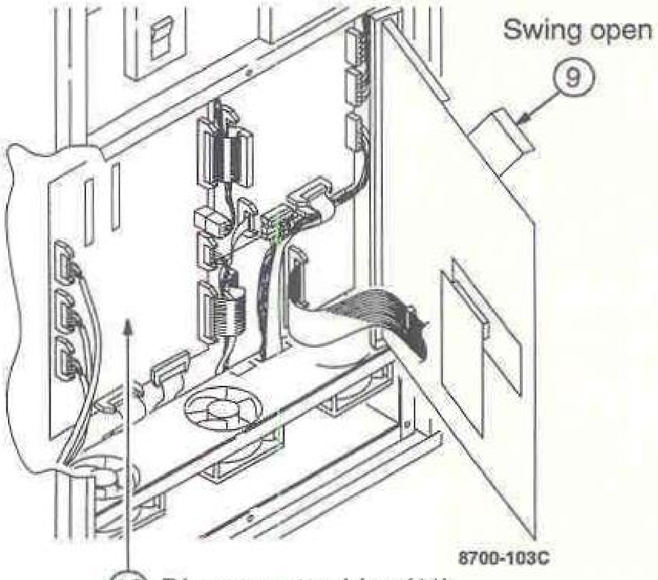
⚠ WARNING

When the power cord is plugged in, hazardous voltages are present in some areas of the 8700. These voltages can cause severe injury or death.

6. Flip down the circuit breaker on the rear of the 8700, then unplug the power cord.
7. Remove the right side panel (4-1-3).
8. Remove the electronics enclosure cover (4-1-4).

⚠ Caution

To avoid damage to sensitive electronic components, always wear an anti-static strap when handling PWAs or EPROMs.



⑩ Disconnect cables (11)

⑪ Remove screws (9)

Figure 4-98.

Note

After a new SCB has been installed, set the 8700 Imager Setup parameters to the values noted in Step 5, and perform the processor temperature adjustment (procedure 3-1).

4-10-6. Machine Interface Board (MIB)

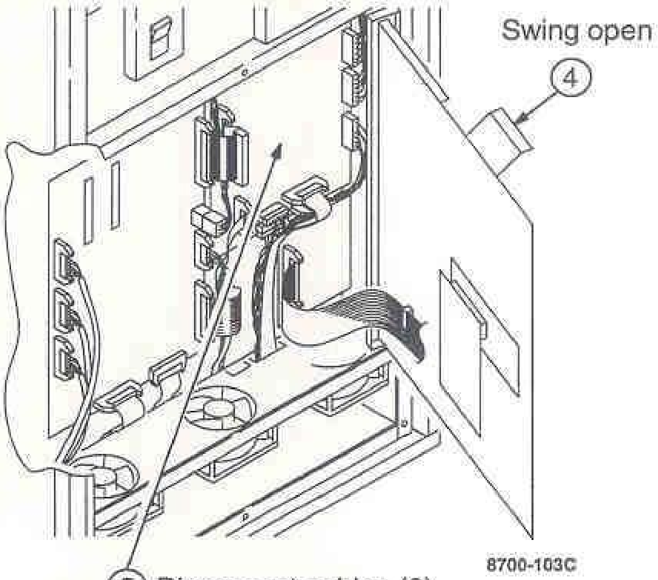
⚠ WARNING

When the power cord is plugged in, hazardous voltages are present in some areas of the 8700. These voltages can cause severe injury or death.

1. Flip down the circuit breaker on the rear of the 8700, then unplug the power cord.
2. Remove the right side panel (4-1-3).
3. Remove the electronics enclosure cover (4-1-4).

⚠ Caution

To avoid damage to sensitive electronic components, always wear an anti-static strap when handling PWAs or EPROMs.



⑤ Disconnect cables (9)

⑥ Disconnect power wires (4)

⑦ Remove screws (6)

Figure 4-99.

4-10-7. New Modem Board (NMB)

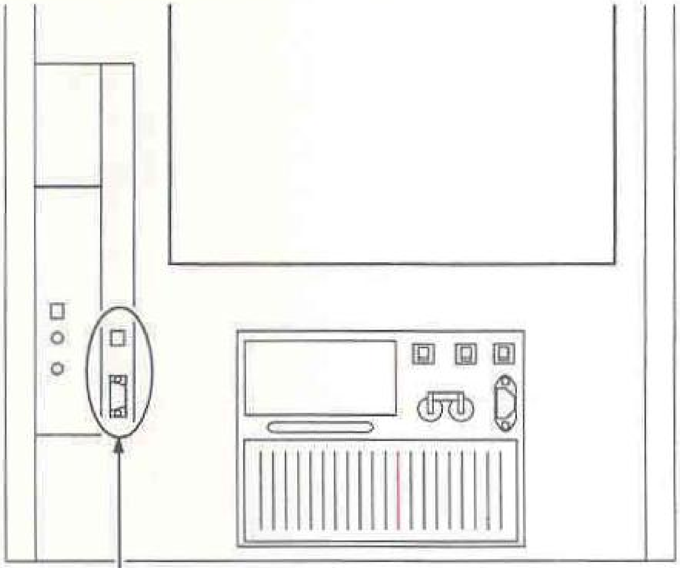
⚠ WARNING

When the power cord is plugged in, hazardous voltages are present in some areas of the 8700. These voltages can cause severe injury or death.

1. Flip down the circuit breaker on the rear of the 8700, then unplug the power cord.
2. Remove the right side panel (4-1-3).
3. Remove the electronics enclosure cover (4-1-4).

⚠ Caution

To avoid damage to sensitive electronic components, always wear an anti-static strap when handling PWAs or EPROMs.



④ Disconnect cable(s)

⑤ Remove connector standoff screws (2)

Figure 4-100.

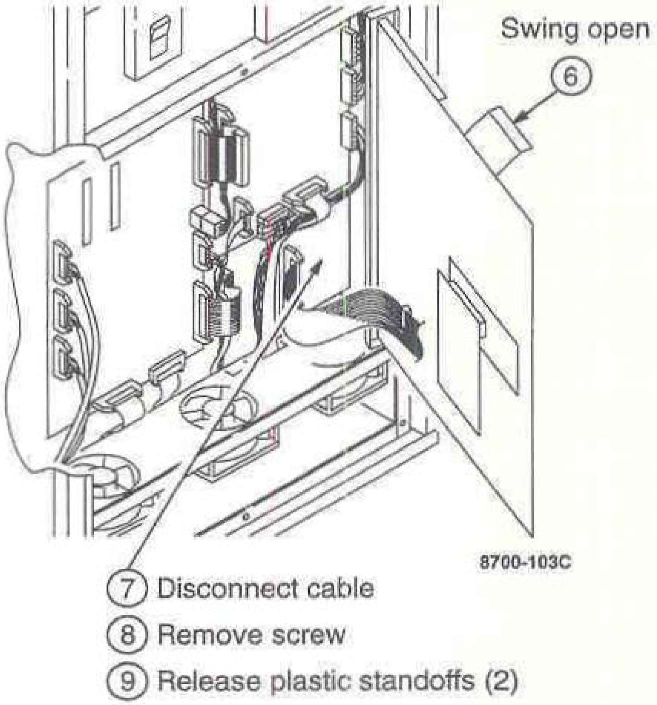

Swing open
⑥
8700-103C
⑦ Disconnect cable
⑧ Remove screw
⑨ Release plastic standoffs (2)

Figure 4-101.

4-10-8. Cooling Fan Motors (M1001 – M1003)

⚠ WARNING

When the power cord is plugged in, hazardous voltages are present in some areas of the 8700. These voltages can cause severe injury or death.

1. Flip down the circuit breaker on the rear of the 8700, then unplug the power cord.
2. Remove the right side panel (4-1-3).
3. Remove the electronics enclosure cover (4-1-4).

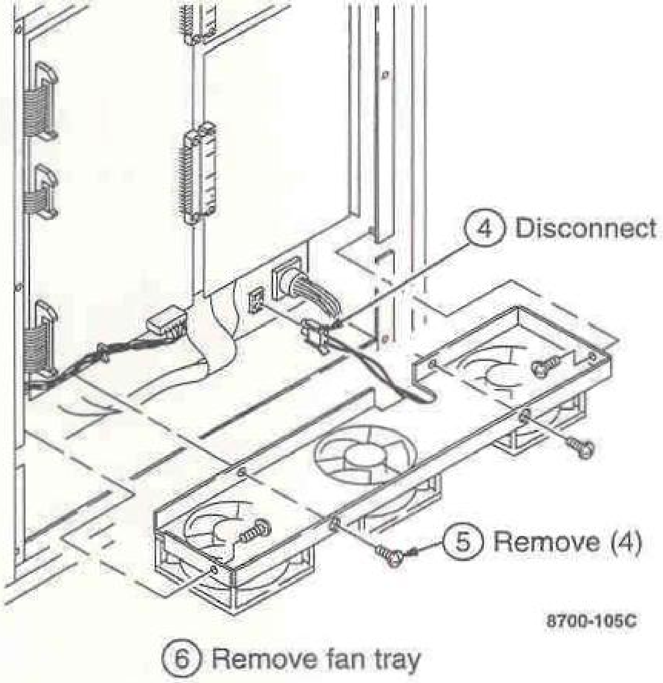

④ Disconnect
⑤ Remove (4)
8700-105C
⑥ Remove fan tray

Figure 4-102.

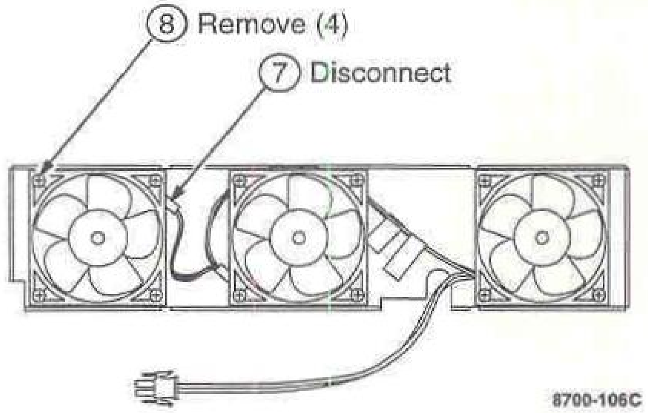

⑧ Remove (4)
⑦ Disconnect
8700-106C

Figure 4-103.

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5-1. Required Tools

In addition to standard hand tools (screwdrivers, wrenches, etc.), the tools listed in this subsection are required to service the 8700. Note the following:

- With the exception of Items 7 through 9, the listed tools are a subset of the tools required to service the 969 HQ.
- Items 1 through 3 are provided to 3M service technicians. Non-3M service technicians must obtain them locally.
- Items 4 through 9 are available from the Service Parts and Logistics Center (SP&LC).
- Items 10 through 13 are available from TECHNI-TOOL, Inc. If equivalent tools cannot be obtained from other sources, contact TECHNI-TOOL at the following address:

TECHNI-TOOL, Inc.
5 Apollo Rd. P.O. Box 368
Plymouth Meeting, PA 19462
Attn: Bill Bezar
(215) 825-4990

1. Toshiba T3300 notebook personal computer (or equivalent) with:

    386SL 25 MHz processor
    4 MB RAM
    120 MB hard disk
    PCMCIA modem

    Note

    The specifications listed above reflect the minimum configuration required to run the MPC for WIndows software.

2. Fluke DVM, Model 87 (or equivalent)
3. Dual trace oscilloscope meeting the following specifications:

    Band Width: 0 to 100 MHz
    Sensitivity: 0.5 mv
    Accuracy: ± 3%

4. Cable, MPC Serial Port 26-1011-4592-3
5. Connector Assembly, 9-Pin Loopback (two required) 78-8075-2585-8

6.	DEIB Test Pattern (SMPTE) EPROM Kit	78-8063-3993-9
7.	Temperature Meter Kit (includes Minco temperature meter and 11" bar type probe, calibrated as a pair at the factory)	78-8099-9500-0
8.	Probe (11" bar type)	26-1011-8560-6

Note

If a new probe is ordered, the probe and meter must be sent in for calibration. Refer to procedure 5-2.

9.	Block (for use with probe)	78-8064-5583-4
10.	Connector, BNC T, F-M-F	458TE266
11.	Terminator, BNC, 75 Ohm	458TE841
12.	Adapter, BNC	458TE1468
13.	Static Protection Kit (includes a static dissipative work surface, a ground cord, two sizes of wrist bands, and an alligator clip)	780ST8501

5-2. Temperature Meter and Probe Calibration

The temperature meter and bar type probe must be calibrated together as a pair at least once per year. Send the meter, probe, and calibration form to:

3M Metrology Services
3M Center, Bldg. 216-1W-04
St. Paul, MN 55144

The calibration process takes approximately one week. Send the meter and probe in for calibration prior to going on vacation; this will ensure that they will be available for use when needed.

5-3. Serial Number Label Location

The serial number label is located on the frame behind the left door of the 8700. Use this serial number to report all service activity. Customers should be instructed to provide the model and serial number when requesting service.

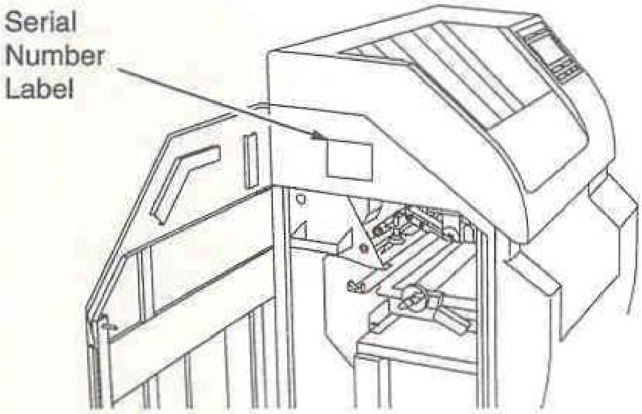

Figure 5-1.

5-4. Adapter Cable Pinouts

Figure 5-2 through Figure 5-4 provide the pinouts for the various host adapter cables that can be connected to the copper TDB or the UKEIB. Figure 5-5 provides the pinout for the 37 to 26 pin DDR to UKEIB adapter cable.

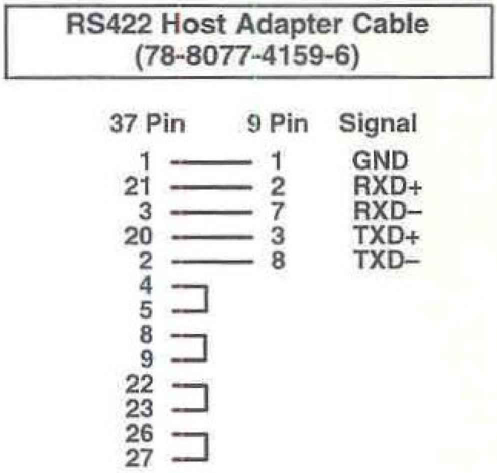
RS422 Host Adapter Cable
(78-8077-4159-6)
37 Pin
9 Pin
Signal
1 —— 1 GND
21 —— 2 RXD+
3 —— 7 RXD–
20 —— 3 TXD+
2 —— 8 TXD–
4
5
8
9
22
23
26
27

Figure 5-2.

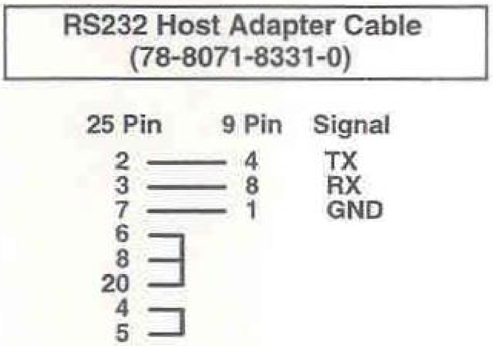
RS232 Host Adapter Cable
(78-8071-8331-0)
25 Pin
9 Pin
Signal
2 —— 4 TX
3 —— 8 RX
7 —— 1 GND
6
8
20
4
5

Figure 5-3.

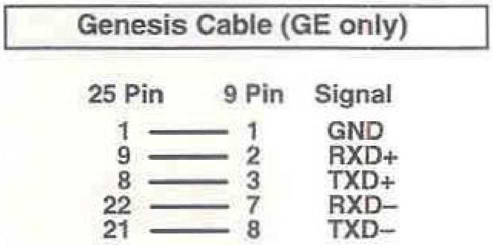
Genesis Cable (GE only)
25 Pin
9 Pin
Signal
1 —— 1 GND
9 —— 2 RXD+
8 —— 3 TXD+
22 —— 7 RXD–
21 —— 8 TXD–

Figure 5-4.

37 to 26 Pin
DDR to UKEIB Adapter Cable
(78-8063-4008-7)

37 Pin	26 Pin	Signal
1	1	GND
21	2	RX1+
3	3	RX1–
20	11	TX1+
2	12	TX1–
22	6	FT–
7	7	GND
4	4	FT+
11	5	GND
25	8	+12V
30	9	+12V
31	10	+12V
32	19	+12V
13	16	GND
14	17	GND
35	26	+12V
17	25	GND
5		
9		
23		
27		

Figure 5-5.

5-5. Preventive Maintenance

5-5-1. Preventive Maintenance Intervals

In order to consistently produce the highest quality images, the 8700 should receive periodic routine maintenance. PM procedures must be performed:

- Every EM call
- Every 10,000 cycles
- Every 30,000 cycles (or annually)

5-5-2. Supplies Required for PM

Cleaning Kit, including:	TBD
a. Cleaning Pads (1 bag)	78-8018-2802-7
b. Isopropyl Alcohol (1 quart)	78-8033-7475-6
c. Acetone (500 ml) *	26-1010-0541-6
d. Zip Lock Bag (5 each) *	26-1011-4122-9

* Order from 3M Office Supply, as you would order a manual.

Other Supplies

3M™ Auto-Pak™ Tack Cloth	70-0704-1761-6
BREAK-FREE™ Lubricant	TBD
3M™ DryView™ Drum Conditioner	TBD
Lint-free Cloths	
Protective Gloves	26-1005-2357-5

Custody Parts

Power Module Filter	78-8095-9495-1
Electronic Enclosure Filter	78-8094-5979-1
Metal Filter (Grease)	26-1011-6788-5
Felt Plate	78-8092-4093-6
Filtration Filter	78-8094-9054-9
Air Barrier	78-8095-9483-7

⚠ Caution

The cleaning materials may create odors that are offensive to users and patients, so schedule the maintenance accordingly. Use gloves while cleaning.

5-5-3. EM Call Checklist

If the number of cycles since the last PM is greater than 7,500, use the 10,000 Cycle Checklist (see next paragraph) rather than this EM Call checklist.

1. ☐ Open the processor cover (reference procedure 4-2-1), and check the drum for damage. (Do not remove it.) If the drum is damaged, replace it. (Perform step 2 below before replacement.)
2. ☐ Clean the processor rollers that are accessible without further disassembly (see Figure 5-6). (Do not remove the rollers.) Use a soft, lint-free pad to wipe the rollers clean with alcohol.
3. ☐ Clean the platen using 3M™ Auto-Pak™ Tack Cloth (procedure 5-5-7).

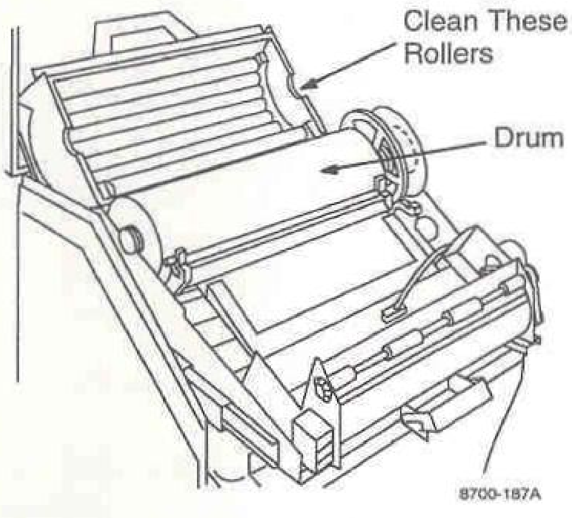

Figure 5-6.

5-5-4. 10,000 Cycle Checklist

After every 10,000 cycles, the 8700 Local Panel displays a message prompting the user to schedule a PM call. The user can remove this message by opening and then closing the filtration assembly door with power on. A PM should be set up at your and the user's convenience.

1. ☐ Check the Error Log and the Print Log. In the Error Log look for film feed problems, for example. In the Print Log, look for inconsistent readings in DPatch, beam power, and kicker feed.
2. ☐ Remove the drum (procedure 4-2-1) and check for damage. If the drum is damaged replace it.
3. ☐ Perform complete processor cleaning (procedure 5-5-6).
4. ☐ Check the stripper gap and adjust as necessary (procedure 3-2).
5. ☐ Clean the platen using 3M™ Auto-Pak™ Tack Cloth (procedure 5-5-7).
6. ☐ Clean the transport rollers (procedure 5-5-8).
7. ☐ Clean the rollback assembly (procedure 5-5-9).

Note

After completing cleaning, place the used cleaning pads in a zip lock bag and dispose of them properly.

8. ☐ Do a calibration sheet and check the D Log E curve.
9. ☐ Replace the filtration filter if the cycle count since the last filter replacement is greater than 7,500.
10. ☐ Replace the power module filter.
11. ☐ Clean the electronic enclosure filter.

5-5-5. 30,000 Cycle (or Yearly) Checklist

1. ☐ Perform steps 1 through 10 of the 10,000 cycle procedure. During processor cleaning (step 3):
    - ☐ After cleaning the processor rollers, oil them with BREAK-FREE™ lubricant.
    - ☐ Replace the felt plate and pad assembly (see Figure 5-7).
    - ☐ Replace the felt air barrier (Figure 5-7).
2. ☐ Replace the electronic enclosure filter.
3. ☐ Replace the grease filter in the backpack (Figure 5-7).

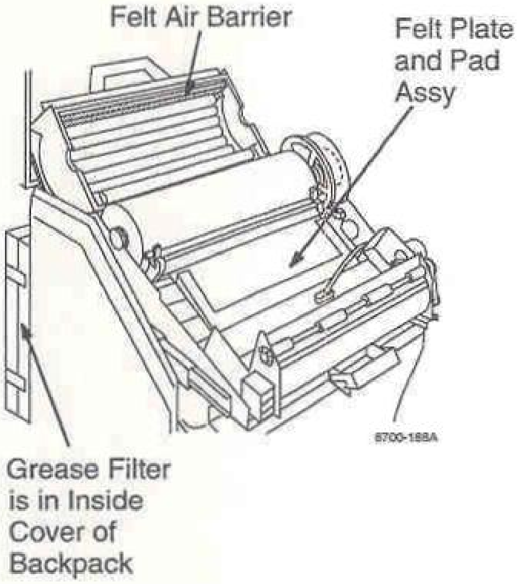
Felt Air Barrier
Felt Plate and Pad Assy
Grease Filter is in Inside Cover of Backpack
8700-188A

Figure 5-7.

5-5-6. Processor Maintenance

Maintenance Interval

Every 10,000 prints

Supplies Required

- Soft, lint-free cleaning pads
- Soft, lint-free cloths
- Isopropyl alcohol
- Acetone
- 3M™ DryView™ Drum Conditioner
- BREAK-FREE™ Lubricant
- Zip Lock Bag
- Protective Gloves

Procedure

Drum and Processor Rollers

Note

You must have 3M DryView Drum Conditioner on hand before cleaning the processor drum surface. Cleaned drums will jam if untreated.

⚠ WARNING

When the power cord is plugged in, hazardous voltages are present in some areas of the 8700. These voltages can cause severe injury or death.

⚠ Caution

⚠ Hot Surface ⚠

When the imager is initially powered down, the processor drum and rollers are hot. Take care when removing the drum and rollers.

1. Remove the processor drum. (Perform all the steps of procedure 4-2-1.)

⚠ Caution

The surface of the drum is easily damaged by fingernails, jewelry, or any debris. Do not lay the drum on its silicon surface. Either lay it down on its gear or stand it upright on a roll of tape. The kind of tape is irrelevant, as long as the core of the roll has a diameter greater than 2 inches (51 mm).

Before cleaning the drum, remove any jewelry (rings, bracelets, watches, etc.) that could accidentally contact the surface of the drum.

2. Use lint-free cleaning pads and isopropyl alcohol to clean the surface of the drum. Wipe the entire surface. Initially the cleaning pads will pick up a dark brown stain from the drum. Continue cleaning until a fresh cleaning pad shows only a black stain.
3. Wipe one full bottle of drum conditioner over the surface of the drum.
4. Remove the processor rollers (procedure 4-2-2).
5. Clean each roller with lint-free cleaning pads and acetone.

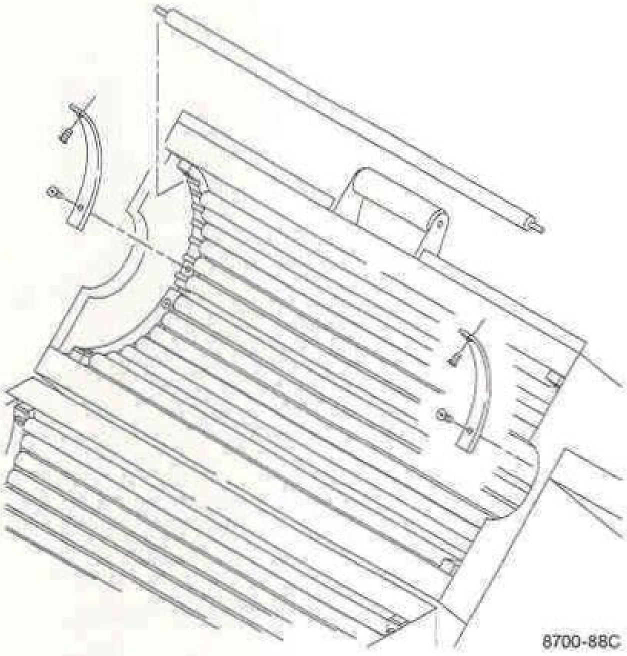

Figure 5-8.

Processor Foil Surfaces and Cooling Tray

⚠ Caution

The foil insulated surfaces inside the processor can be damaged if excessive force or abrasive materials are used for cleaning. Take care to avoid puncturing the foil.

1. Clean the foil insulated surfaces with soft, lint-free cleaning pads and acetone (see Figure 5-9).

⚠ Caution

The cooling tray is polished at the factory. Take care not to mar its smooth finish.

2. Clean the cooling tray with soft, lint-free cleaning pads and isopropyl alcohol (see Figure 5-9).

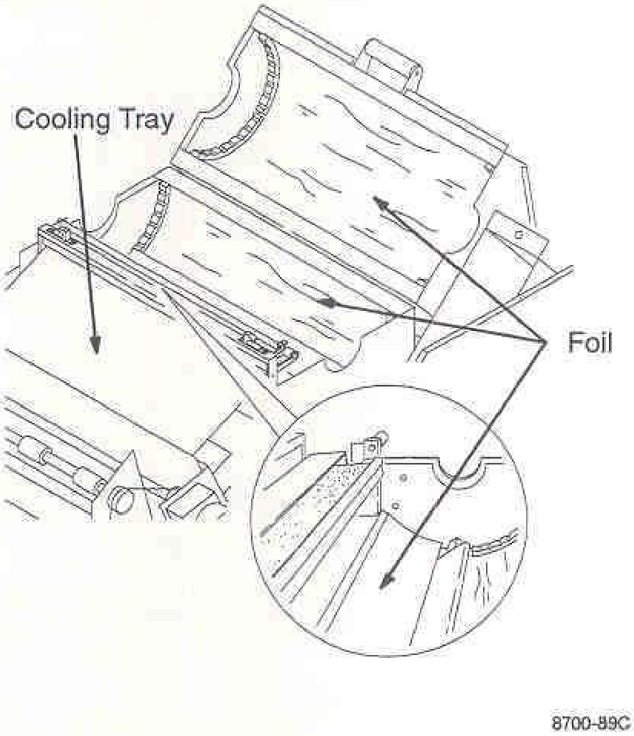

Figure 5-9.

Felt Plate and Stripper

1. Remove the felt plate (see Figure 5-10).
   - If this is a 10,000 cycle PM, clean the felt plate (not the pad) with acetone.
   - If this is a 30,000 cycle PM, replace the felt plate and pad with a new one during reassembly.
2. Clean both sides of the stripper with a soft, lint-free cleaning pad and acetone (see Figure 5-10).

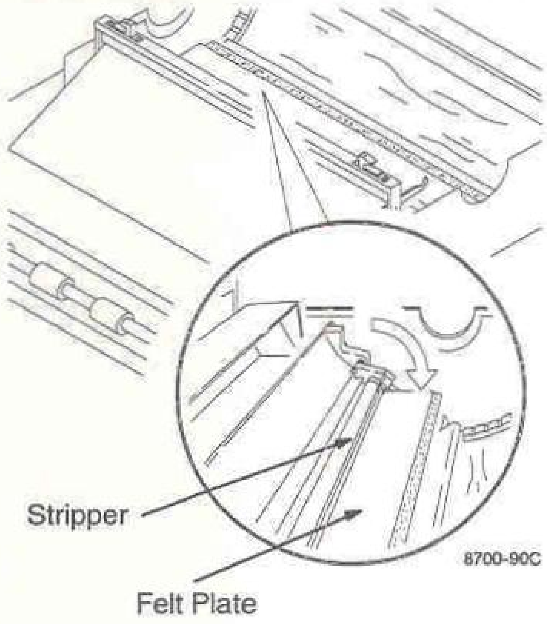

Figure 5-10.

Exit Rollers

1. Clean the two rubber rollers that are accessible in the exit assembly (see Figure 5-11). Use a soft lint-free cloth and alcohol.
2. Reassemble the processor.

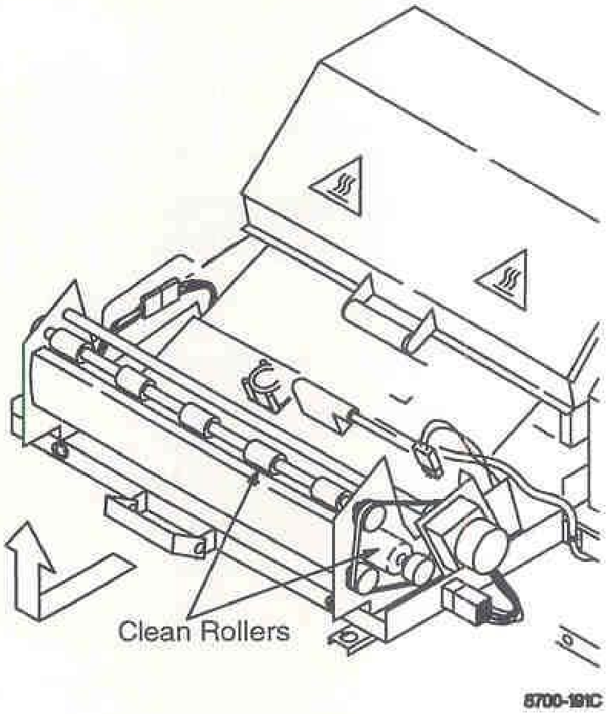

Figure 5-11.

5-5-7. Cleaning the Platen

Cleaning Interval

Every PM

Supplies Required

3M™ Auto-Pak™ Tack Cloth

Procedure

1. Remove the supply cartridge.

⚠ WARNING

When the power cord is plugged in, hazardous voltages are present in some areas of the 8700. These voltages can cause severe injury or death.

2. Flip down the circuit breaker on the rear of the 8700. Then unplug the power cord.
3. Open the left door via its mechanical release.
4. Open the platen access door (see Figure 5-12).

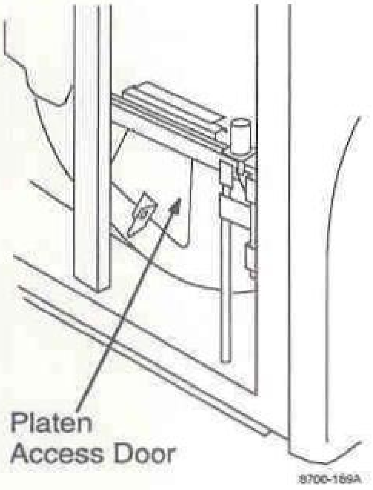

Figure 5-12.

⚠ Caution

The bottom, anti-reflective surface of the platen is easily damaged by fingernails and jewelry. Prior to cleaning the platen, remove any jewelry (rings, bracelets, watches, etc.) which may accidentally come in contact with the bottom surface of the platen.

If the 3M™ Auto-Pak™ cloth catches on parts inside the platen, take care not to damage the parts when removing the cloth. Check for and remove any torn pieces of cloth.

5. If the Print Log indicated inconsistencies in beam power or attenuator readings, use compressed air to blow away foreign material from the beam power monitor access hole (see Figure 5-13).
6. Squeeze the handle on the transport assembly and pull the transport out fully.
7. Reach through the opening in the back of the platen (from the inside) and clean the back (outside) of the platen (see Figure 5-13).
8. Use an Auto-Pak cloth to wipe clean the bottom surface of the platen.

Note

The 3M™ Auto-Pak™ cloth will not remove large particles. Use a flashlight to locate and fingers to remove large particles.

9. When finished cleaning the platen, close and latch the platen access door.

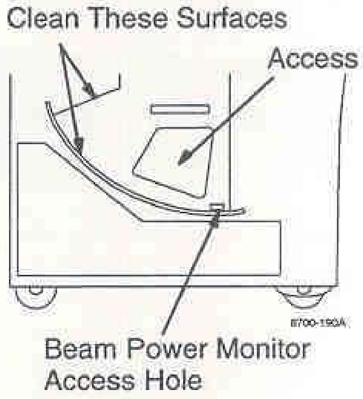

Figure 5-13.

5-5-8. Cleaning the Transport Rollers

Cleaning Interval

10,000 prints

Supplies Required

Lint-free cloth
Isopropyl alcohol

Procedure

1. This procedure assumes that you have just completed platen cleaning, so that (1) the supply cartridge is removed, (2) power is off, (3) the left door is open, and (4) the transport assembly is pulled out. Reference steps 1, 2, 3, and 7 of procedure 5-5-7.

⚠ WARNING

When the power cord is plugged in, hazardous voltages are present in some areas of the 8700. These voltages can cause severe injury or death.

2. Use lint-free cloths and alcohol to clean the following transport rollers (see Figure 5-14):
   - Two rollers at the top front of the transport.
   - Three rollers at the bottom of the transport.
   - One roller accessible at the top rear of the transport.
3. Return the transport assembly to its normal operating position.

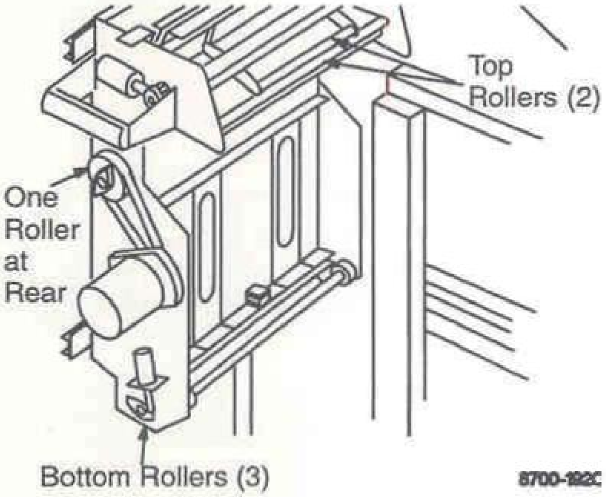

Figure 5-14.

5-5-9. Cleaning the Rollback Assembly Roller and Pad

Cleaning Interval

Every 10,000 prints

Materials Required

Lint-free cloth
Isopropyl alcohol

Procedure

1. This procedure assumes that you have just completed platen and transport cleaning, and that (1) the supply cartridge is removed, (2) power is off, and (3) the left door is open. Reference steps 1, 2, and 3 of procedure 5-5-7.

⚠ WARNING

When the power cord is plugged in, hazardous voltages are present in some areas of the 8700. These voltages can cause severe injury or death.

2. Use a lint-free cloth and isopropyl alcohol to clean the rollback roller and pad (see Figure 5-15).
3. Close the left side door, and replace the supply cartridge.

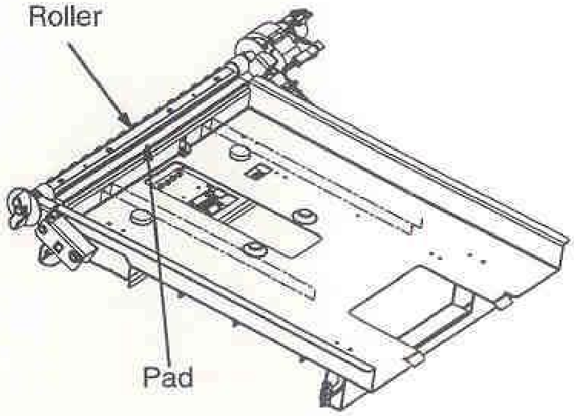

Figure 5-15.

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6-1. Overall System Architecture

The architecture of the 8700 is designed to be modular for ease of assembly, service, and access for jam clearing. The system contains modules to open the film cartridge, pick up the film, transport the film from the cartridge to the exposure and processor stations, expose the film, and process the film. It also contains electronic modules for control and power conditioning components. Operator interfaces include the local panel (mounted to the top cover of the imager), and two different remote keypads (both of which are optional).

6-1-1. Module Architecture

The modules within the 8700 have been assigned the following reference designations for ease in identifying the location and function of components.

Each electronic component within each module has been assigned a reference designation based upon the module designation.

Reference Designation	Module	Function
100	Local Panel	Operator commands & status messages
200	Densitometer	Reads the density patch on films.
300	Processor	Develops the exposed film and delivers it to the exit tray in the top cover.
400	Transport	Moves the film from the supply cartridge to the exposure module and from the exposure module to the processor module.
500	Pickup	Lifts the film from the supply cartridge to the transport module.
600	Rollback	Opens and closes the cover of the supply cartridge.
700	Exposure	Exposes the film. Consists of a laser optics system and an exposure platen.
800	Frame	Not a functional module, but used to identify components that are mounted to the frame (and not included in other modules).
900	Power	Contains the DC power supplies and AC power conditioning components.
1000	Electronic	Contains the control and image processing electronics.

6-1-2. System Electronics Architecture

The system electronics have been developed jointly by 3M and two partners - Analogic and General Scanning Inc. They are divided into the following three functional sections:

- IMS – Image Management System (Analogic)
- LOS – Laser Optics System (GSI)
- MCS – Machine Control System (3M)

Figure 6-1 is a block diagram that summarizes the architecture of the overall system electronics. It illustrates the basic connections between the three functional sections and the printed circuit boards within each section. Each section is described in greater detail in subsequent paragraphs.

All of the IMS and the major boards of the MCS are located in the Electronic Enclosure Assembly. The smaller boards of the MCS are located in the other modules. All of the boards for the LOS are located within the optics enclosure provided by GSI.

The IMS has interfaces to receive image data and commands from the host. When it has received an image from a host, it sends a command over a serial interface to the MCS. The serial interface is also used to exchange status between the systems. The MCS sets up the control lines for the LOS over a control and status interface and starts the print process. The IMS has an interface to the LOS over which the image data is transferred.

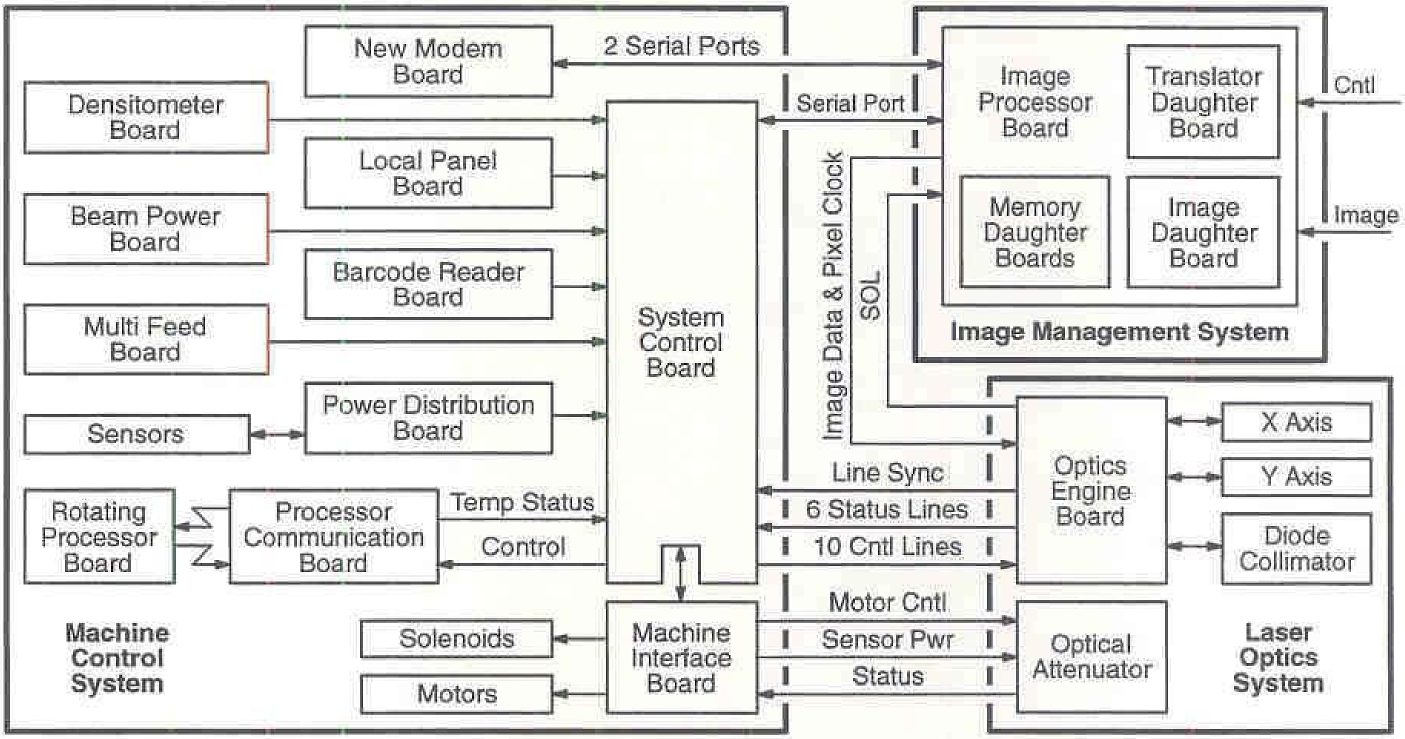
New Modem Board
2 Serial Ports
Densitometer Board
Serial Port
Image Processor Board
Translator Daughter Board
Cntl
Local Panel Board
Beam Power Board
Memory Daughter Boards
Image Daughter Board
Image
Barcode Reader Board
System Control Board
Image Data & Pixel Clock
SOL
Multi Feed Board
Image Management System
Power Distribution Board
Sensors
X Axis
Optics Engine Board
Y Axis
Line Sync
Rotating Processor Board
Processor Communication Board
Temp Status
6 Status Lines
Diode Collimator
Control
10 Cntl Lines
Motor Cntl
Machine Control System
Solenoids
Machine Interface Board
Sensor Pwr
Optical Attenuator
Laser Optics System
Motors
Status

Figure 6-1.

6-2. Module Descriptions

6-2-1. Local Panel Assembly

The Local Panel is one of the operator interfaces to the system. The others are optional keypads. The Local Panel has function keys for input and an LCD to display system status and error messages. It is mounted on the cover of the system and interfaces to the System Control Board (SCB) through a 50 conductor shielded cable.

6-2-2. Densitometer Assembly

The densitometer is a subassembly of the Processor Assembly. It provides an analog signal which represents the density of the D-patch on the film to the SCB through a 15 conductor shielded cable.

6-2-3. Processor Assembly

The Processor Assembly is located in the top of the system. It is responsible for receiving the film from the Transport Assembly, developing it over a hot drum, cooling it, passing it through the densitometer and delivering it to an output tray in the cover.

The Processor Assembly contains the following electrical components:

Reference Designation	Description	Function
M301	Processor Motor	Drives the processor drum.
M303	Exit Motor	Drives the exit rollers.
SW301	Processor Exit Sensor	Senses the film as it enters the densitometer.
SW302	Processor Entrance Sensor	Senses the film as it enters the processor assembly.
SW304	Transport Exit Sensor	Senses the film as it enters the exit assembly.
PCB	Processor Communication Board	Board which communicates through an optical interface to the RPB to provide temperature status and control from the SCB.
RPB	Rotating Processor Board	Board responsible for controlling the temperature of the processor drum under software control from the SCB.

6-2-4. Transport Assembly

The Transport Assembly is located in the middle of the system along the back side. It is responsible for moving the film from the Pickup Assembly to the Platen in the Exposure Assembly for imaging and from there to the Processor Assembly for processing. The Transport Assembly can load a film into the Platen while unloading another. It can prestage a film for exposure while delivering another film to the processor.

The Transport Assembly contains the following electrical components:

Reference Designation	Description	Function
M401	Transport Feed Roll Motor	Drives the film from the pickup to the platen
M402	Transport Motor	Drives the film from the platen to the processor
M403	Platen Motor	Drives the film in and out of the platen
SW402	Platen Entrance Sensor	Senses the film at the platen entrance
SW403	Platen Exit Sensor	Senses the film at the platen exit
SW404	Transport Midpoint Sensor	Senses the film between SW403 and the processor
SW405	Transport Feed Sensor	Senses the film between the feed rollers and SW402
SW406	Tongue Depressor Sensor	Senses whether the tongue depressor is down
SW407	Tongue Depressor Interrupt Switch	Interrupts the power to the tongue depressor solenoid when the Transport Assembly is pulled out

Reference Designation	**Description**	**Function**
Y401	Tongue Depressor Solenoid	Actuates the tongue depressor
Y402	Transport Feed Roll Solenoid	Lifts the nip roll at the feed roll when loading film
Y403	Gate Solenoid	Opens the gate at the entrance of the platen
MFB	Multi Feed Board	Senses the number of films present at the feed roll when loading film

6-2-5. Pickup Assembly

The Pickup Assembly is located in the middle of the system under the Processor. It is responsible for removing the film from the film cartridge and bringing it up to the feed rollers in the Transport Assembly.

The Pickup Assembly contains the following electrical components:

Reference Designation	Description	Function
K501	Vacuum Relay	Solid State Relay (SSR) which turns on the vacuum pump
M501	Pickup Motor	Drives the pickup arm
M502	Vacuum Pump Motor	Provides vacuum for suction cups
SW501	Picker Down Sensor	Senses that the picker arm is in the down position
SW502	Film Out Sensor	Senses that the film cartridge is empty
SW503	Picker Up Sensor	Senses that the picker arm is in the up position
SW504	Picker Extended Sensor	Senses that the picker arm is in the mid position
Y501	Vacuum Solenoid	Opens the line between the vacuum pump and suction cups

6-2-6. Rollback Assembly

The Rollback Assembly is located in the middle of the system under the Pickup Assembly. It is responsible for opening and closing the film cartridge and reading the bar code on the bottom of the cartridge.

The Rollback Assembly contains the following electrical components:

Reference Designation	Description	Function
M601	Rollback Motor	Drives the roller which opens and closes the cartridge
SW601	Rollback Motor Home Sensor	Senses that the roller is in the home position
SW603	Cartridge Open Sensor	Senses that the cartridge is open
SW604	Cartridge Sensor	Senses that the cartridge is present
BRB	Barcode Reader Board	Reads the bar code on the bottom of the cartridge

6-2-7. Exposure Assembly

The Exposure Assembly is located in the lower portion of the system over the Power Module Assembly. It consists of the Laser Optic System (LOS) and the Platen Assembly. The Platen Assembly positions the film for exposure.

The Platen Assembly contains the following electrical components:

Reference Designation	Description	Function
SW701	Platen Bottom Sensor	Senses that the film is at the bottom of the platen
SW703	Platen Door Interlock Sensor	Senses that the platen door is closed
Y701	Platen Top Solenoid	Forces film to the bottom of the platen prior to exposure
Y702-705	Platen Alignment Solenoids	Centers the film in the platen prior to exposure
Y706	Platen Kicker Solenoid	Forces the film into the transport after exposure
BPB	Beam Power Board	Reads the power of the laser beam at the platen

6-2-8. Frame Assembly

The Frame Assembly is the skeleton of the system. It supports all of the rest of the assemblies. There are components on it which are not part of any other assembly.

The Frame Assembly contains the following electrical components:

Reference Designation	Description	Function
K801	Processor Power Relay	Provides power to the Processor Assembly
M801	Filtration Fan Motor	Circulates air through the filter in the backpack
SW801	Filter Present Sensor	Senses that the filter is present in the backpack
SW802	Top Cover Interlock	Machine interlock that senses that the top cover is open
SW803	Left Door Machine Interlock	Machine interlock that senses that the left door is open
SW804	Left Door Laser Interlock	Laser interlock that senses that the left door is open
SW805	Power Switch	Used to latch power relay in the Power Module Assembly
SW806	Supply Door Interlock	Machine interlock that senses that the supply door is open
Y801	Supply Door Solenoid	Unlocks the supply door
Y802	Left Door Solenoid	Unlocks the left door

6-2-9. Power Module Assembly

The Power Module Assembly (PMA) provides power for the system and is located at the bottom of the system. It contains an isolation transformer, which steps down the 200-240 VAC input voltage to 120 VAC for use within the system, and voltage filtering components. There are two DC power supplies within the PMA. The first is a 450 watt supply which supplies the +5, +/–17, and +24 volts used by the system. The second is a 15 watt supply which supplies –5.2 volts for use by the copper connect video interface option.

The PMA contains the following electrical components:

Reference Designation	Description	Function
C901	Filter Capacitor	Conditions the 120 VAC of the transformer
CB901	Input Circuit Breaker	10 amp breaker; protects the input wiring
CB902	Processor Circuit Breaker	15 amp breaker; protects the processor wiring
CB903	Power Supply Breaker	8 amp breaker; protects the power supply, cooling fans, and vacuum pump wiring
CB904	24 VAC Circuit Breaker	3 amp breaker; protects the 24 VAC wiring
LF901	Input Line Filter	Filters the 200-240 VAC input
K901	Power Latch Relay	Latches the power to the system
M901	Cooling Fan Motor	Circulates air through the PMA
PS901	Main Power Supply	Provides +5, +/–17, and +24 volts for the system

Reference Designation	Description	Function
PS902	VIB Power Supply	Provides –5.2 volts for the video interface
T901	Isolation Transformer	Steps down the 200-240 VAC input voltage to 120 VAC
V901	Varistor	Protects against transient voltages on the 120 VAC

6-2-10. Electronic Enclosure Assembly

The Electronic Enclosure Assembly (EEA) is located along the right side of the system. It provides an RFI enclosure for the system control electronics. The EEA provides mounting and interconnect harnesses for the Image Management System (IMS) electronics and for some of the Machine Control System (MCS) electronics. The position of the boards within the EEA are shown in the IMS and MCS sections of this section. Cooling is also provided for the components within the EEA.

The EEA electrical component functions will be described in either the IMS or MCS section. the EEA contains the following electrical components:

Reference Designation	Description
DIB	Digital Interface Board (IMS)
FIB	Fiber Interface Board (IMS)
IPB	Image Processor Board (IMS)
MDB	Memory Daughter Board (IMS)
MIB	Machine Interface Board (MCS)
NMB	New Modem Board (MCS)
PDB	Power Distribution Board (MCS)
SCB	System Control Board (MCS)
TDB	Translator Daughter Board (IMS)
VIB	Video Interface Board (IMS)
M1001-1003	Cooling Fans (MCS)

6-3. Electronics Description

6-3-1. Image Management System

The IMS consists of a group of boards which perform image acquisition, interpolation, filtering, formatting, and output to the LOS. It has interfaces for up to two keypads or hosts through the TDB and interfaces for image sources through four alternate daughter boards. The IMS can be configured with either an 8-bit or 12-bit data path and image memory ranging from 16 to 128 megapixels. The IPB is the core of the IMS and acts as the back plane. All of the other boards in the IMS are daughter boards that plug directly into the IPB.

The IMS can be configured with combinations of the following boards:

Reference Designation	Name	Function
IPB	Image Processor Board	Image processing
MDB	Memory Daughter Board	Image memory – up to 4 boards per system
TDB	Translator Daughter Board	Keypad or host interface – any command set
DIB	Digital Interface Board	Digital host image interface
FIB	Fiber Interface Board	Fiber host image interface
SIB	SCSI Interface Board	SCSI host image interface
VIB	Video Interface Board	Video host image interface

The IMS boards are mounted on an inner swing out panel in the Electronic Enclosure Assembly. The connectors for the TDB and image interface boards are accessible from the rear of the system. The boards are also removable from the rear of the system. The various image interface boards are all the same size and install in the same location. Only one image interface board can be installed at a time.

Figure 6-2 illustrates an example of one of the possible IMS configurations in which the image interface is a FIB. It also shows the position and order of the 4 MDBs which are installed on the back side of the IPB. The MDBs must be installed in the sequence shown. They must also be the same type; i.e., either 8 or 12-bit and either 16 or 32 Megapixel.

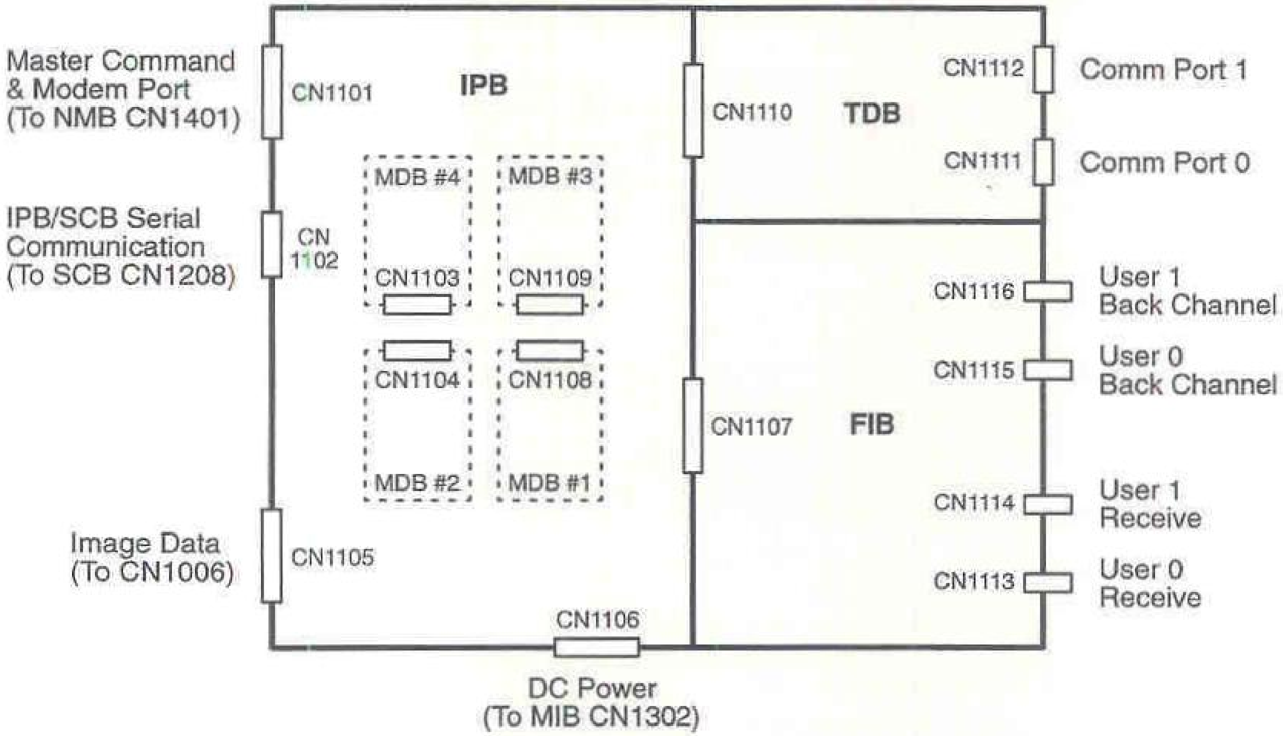
Master Command
& Modem Port
(To NMB CN1401)
CN1101
IPB
IPB/SCB Serial
Communication
(To SCB CN1208)
CN
1102
MDB #4
MDB #3
CN1103
CN1109
CN1104
CN1108
MDB #2
MDB #1
Image Data
(To CN1006)
CN1105
CN1106
DC Power
(To MIB CN1302)
CN1110
TDB
CN1107
FIB
CN1112
Comm Port 1
CN1111
Comm Port 0
CN1116
User 1
Back Channel
CN1115
User 0
Back Channel
CN1114
User 1
Receive
CN1113
User 0
Receive

Figure 6-2.

6-3-1-1. Image Processor Board (IPB)

The IPB performs the acquisition, interpolation, filtering, formatting, and transfer of an image to the LOS. The IPB has the following logical blocks to perform these tasks:

Block	Function
Microprocessor	Controls the functions of the IPB and interface boards
Image Interface	Connects the IPB to one of the four possible image interface boards
Scale LUT	Maps the input pixel width to the memory width
Acquisition Control & Memory Timing	Controls image acquisition modes and generates the timing needed for the image memory
Image Memory	Consists of image memory control, an address generator, and connectors for the 4 MDBs
Interpolation	Performs image interpolation and filtering
Contrast Table	Provides a 10-bit to 12-bit output conversion and a linear 12-bit output path
Format	Controls the output to the LOS interface and switches between image and border
Printer Interface	Outputs the formatted image data to the LOS

Block	Function
Parameter	Stores acquisition and print parameters and performs parameter initialization between various logic blocks
Communication Microprocessor	Provides an interface to the TDB

The bold arrows in Figure 6-3 show the image data path through the IPB. Data enters through the Image Interface Block, passes through the Scale LUT Block, and is stored in the Image Memory Block. This path is active during an external image acquisition. The microprocessor can acquire images directly through the Scale LUT Block. During a print operation, this data is read from the image memory, is interpolated and filtered through the Interpolation Block and then is passed through the Contrast Table Block to the Printer Interface Block. In diagnostic mode, the Microprocessor Block can bypass the Printer Interface Block and intercept the output data at the Contrast Table Block.

The IPB uses a Motorola 68302 microprocessor. It is a highly integrated device with a 68000 core and several additional features. Among them are three serial communication controllers. One is used to control the serial port to the SCB over which system commands and status are exchanged. It is also used for receiving calibrated contrast tables from the SCB. The other two are used for the service modem (NDB). Only one of these serial ports can be active at a time. The two service modem ports are RS-232 compatible, while the SCB port is differential.

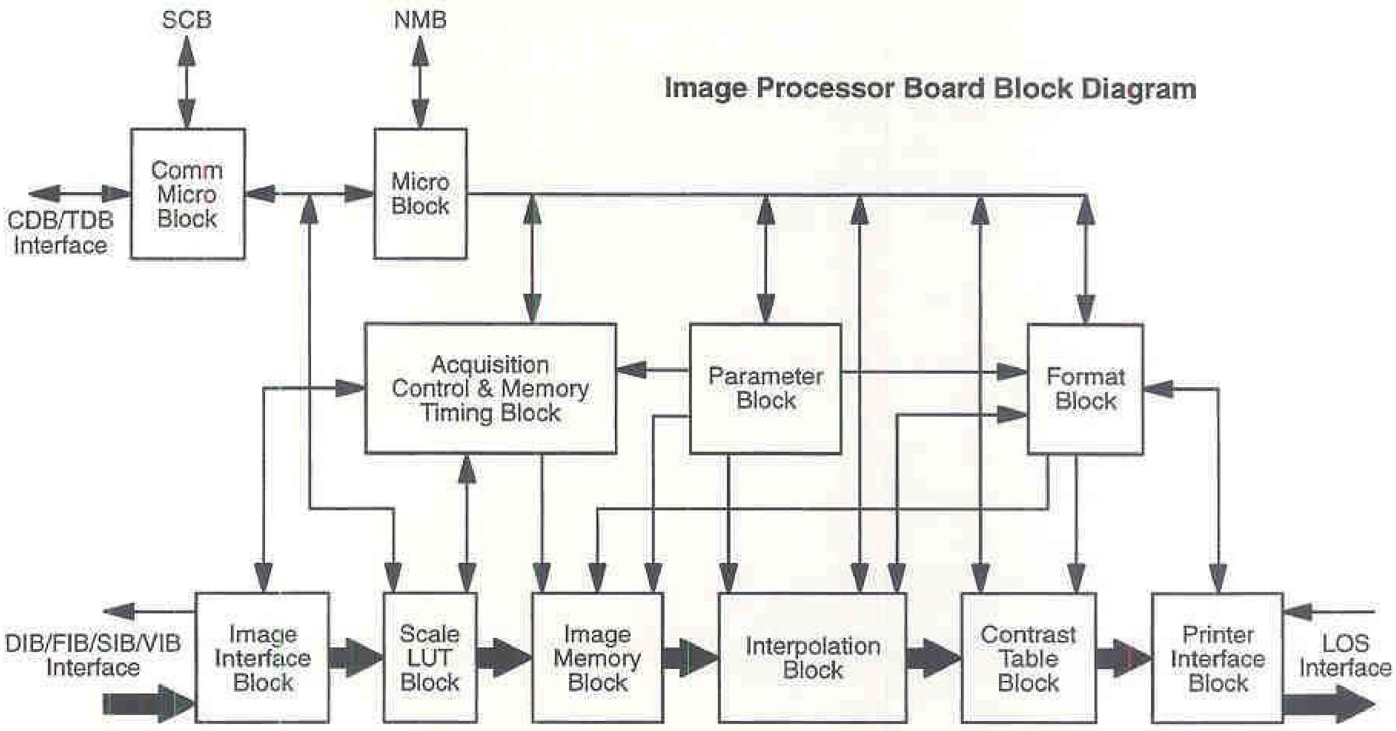
SCB
NMB
Image Processor Board Block Diagram
Comm Micro Block
Micro Block
CDB/TDB Interface
Acquisition Control & Memory Timing Block
Parameter Block
Format Block
DIB/FIB/SIB/VIB Interface
Image Interface Block
Scale LUT Block
Image Memory Block
Interpolation Block
Contrast Table Block
Printer Interface Block
LOS Interface

Figure 6-3.

6-3-1-2. Bandwidth

The system is designed for 120 nanosecond memory which requires a total memory bandwidth of 8.3325 MHz. The IPB has a 33.330 MHz system clock which is divided down to provide the required memory bandwidth. The bandwidth is divided as follows:

Image Transmission	4.16625 MHz
Image Acquisition	4.10225 MHz
Memory Refresh	0.06400 MHz

NOTE: The refresh cycle steals from the acquisition bandwidth in order to perform the refresh.

Image acquisition will support a line burst rate of 4 Megapixels per second and have a maximum average transfer rate of 3 Megapixels per second line to line. Acquisition of video images having a 110 MHz pixel frequency will be supported by allowing a maximum of 32 acquisition passes.

6-3-1-3. Memory Daughter Board (MDB)

Refer to Figure 6-4 for a block diagram of the MDB.

The MDB is available with 16 or 32 megapixels (MP) of memory. The 16 MP version has an 8-bit pixel width; the 32 MP version is available with an 8-bit or a 12-bit pixel width.

The MDB is built with 4 banks of memory. Each bank consists of thirteen DRAMs in a ZIP package. Each bank has an 11-bit address bus, 13-bit data input bus, 13-bit data output bus, and 3-bits of control. The memory is organized for 12-bit image pixels having 1-bit of parity. A fully configured board provides for a 12-bit data path and has 52 DRAMs.

The memory banks can be depopulated for an 8-bit image plus 1-bit parity configuration. The four least significant bits (0-3) are depopulated. A depopulated board provides for an 8-bit data path and has 36 DRAMs.

The address for each memory bank is provided through one of two address multiplexers which also double as the address drivers. One multiplexer drives banks 0 and 1 and the other drives banks 2 and 3. They take the lower 22 bits of the input address and convert these to row and column addresses to the DRAM. A single control signal from the IPB switches the multiplexers between the two DRAM addresses.

The presence or absence of a pull-down resistor at the IPB connector is used to indicate to the IPB whether a MDB is an 8 or 12-bit version. The IPB masks the four least significant bits for an 8-bit MDB. A pin is grounded at the IPB connector to indicate to the IPB whether a MDB is installed at that connector location. Another pin is grounded at the IPB connector to indicate to the IPB whether a MDB is a 16 or 32 MP version.

The information on which pins are grounded is used by a memory configuration register on the IPB to determine image memory width and size and the number of boards. The board size and number of boards installed are combined with the current address to generate board select signals. A memory out-of-bounds error is generated when a memory access is attempted to a board that is not installed.

All boards must be installed in order. If a board is missing, the system will not recognize the boards that follow. If 8-bit and 12-bit boards are intermixed, then the system will assume that they are all 8-bit boards. In addition, 16 and 32 MP boards cannot be intermixed.

Memory Daughter Board Block Diagram

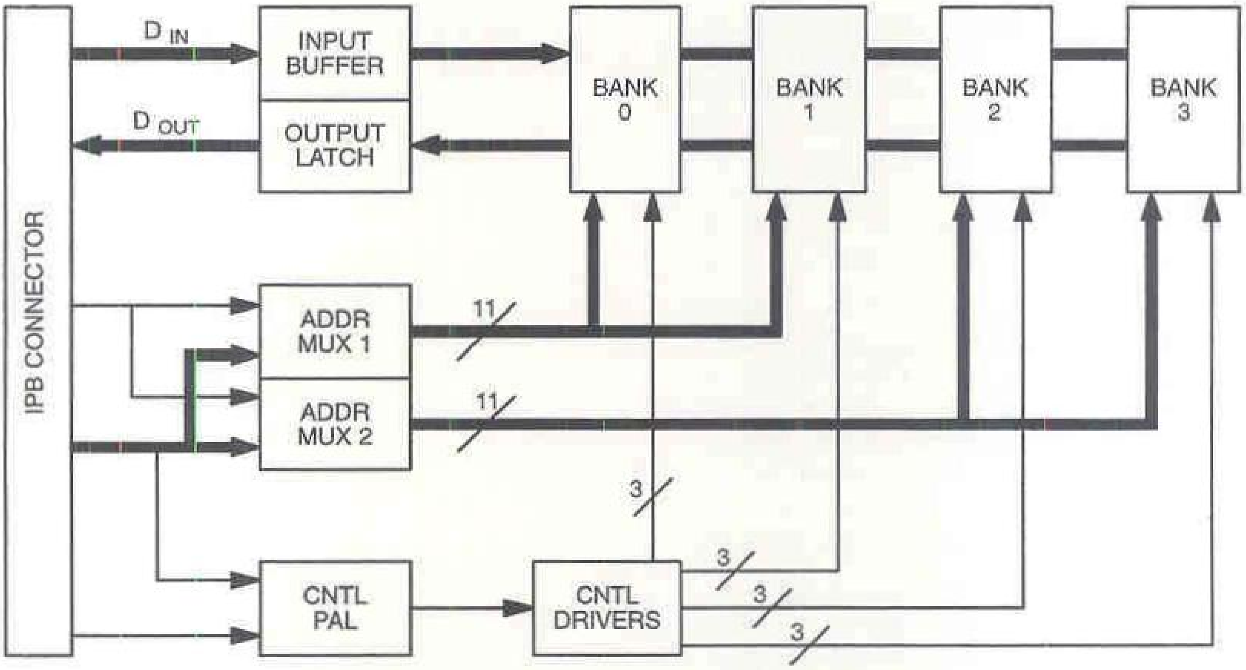
D IN
D OUT
INPUT BUFFER
OUTPUT LATCH
BANK 0
BANK 1
BANK 2
BANK 3
IPB CONNECTOR
ADDR MUX 1
ADDR MUX 2
11
11
3
3
3
3
CNTL PAL
CNTL DRIVERS

Figure 6-4.

6-3-1-4. Translator Daughter Board (TDB)

The TDB provides two serial communication interfaces between the IPB and two hosts and/or keypads. It is responsible for receiving commands from the hosts/keypads, checking for protocol and transmission errors, and sending the commands to the microprocessor on the IPB. It also receives responses from the IPB, formats these responses, and transmits them to the host/keypad.

The TDB has a microprocessor which is responsible for the functions on this board. Communication between the microprocessor on the TDB and the microprocessor on the IPB is handled through a dual-port RAM which resides on the IPB. The communication parameters for the two serial ports on the TDB are passed from the IPB to the TDB through the dual-port RAM after a power-up reset.

The two serial ports on the TDB are jumper selectable for either RS-232 or RS-422 operation. Both ports have only receive and transmit signals. There is no hardware handshaking on either port. They will support baud rates up to 19.2K.

The TDB will accept different command sets and translate them into a common command set. In this way, the IPB will only require a single command set to be active.

6-3-1-5. Image Interface Boards (DIB, FIB, SIB, VIB)

The system is capable of being configured for either a digital, fiber, SCSI, or video input. The digital input may be from 1 or 2 sources and may be either 831/952/959 protocol or 969 protocol. The fiber input is capable of being connected to 1 or 2 external EIBs. The design allows two different types of EIBs to be connected at the same time. When 2 EIBs are connected, only one input on each can be used. The SCSI input may connect to one or more image sources depending on the server to which it is connected. The video input may be from one or two sources and may either provide an external clock or use a plug-in phase lock loop (PLL) board for internal clock generation.

6-3-1-6. Digital Interface Board (DIB)

The DIB provides for two digital host copper connections to the system through the IPB. The interfaces are multiplexed which allows only one interface to be active at a time. They are designed to handle the 831/952/959 and 969 protocols with a maximum pixel width of 12 bits. The inputs on each interface are optically isolated and are RS422 compatible on the request and re-transmit lines. The maximum image transfer rate is 4 MP/sec. The host system is responsible for ensuring that the 3 MP/sec average transfer rate is not exceeded.

The DIB interfaces to the IPB through the image source interface connector (CN1107). It provides a 12-bit image output to the IPB along with an input parity error detected signal and a strobe. The DIB receives its parameters over a 10-bit parameter bus and returns command status over a 2-bit command bus. Both functions provide a strobe signal. The DIB receives its power, clock, and power-up reset from the IPB through CN1107.

The DIB has test pattern generation circuitry. The test image data is stored in an EPROM which is supplied and installed by 3M. The image is transferred at a 2 MP/sec rate. The maximum image size is 512x509 in 831/952/959 format and 512x511 in 969 format.

There are two defined forms of image transmission. The first is 831/952/959 digital protocol. In this format, a line by line handshaking is performed which requires a request for each line. The host terminates each line, except the last, with an EOM. The last line is terminated with an EOT. The second is 969 protocol. The entire image is transferred at once with no line by line handshaking with this protocol. The host terminates the transfer with an EOT. In both protocols, it is possible to transmit a 4 byte header prior to the image data to define the image size. The IMS treats the header as a separate image, which requires that it be terminated with an EOT.

6-3-1-7. Fiber Interface Board (FIB)

Refer to Figure 6-5 for a block diagram of the FIB.

The FIB has two optically coupled image source interfaces and provides an interface between the IPB and external interface boxes (EIBs). The source interfaces are multiplexed and allow only one source to acquire at a time. The IPB determines which source interface is active via the source of the acquisition command received from the TDB.

Each image source interface consists of a high speed optical receiver and low speed optical transmitter. The optical receiver circuit, referred to as the forward channel, is capable of operating at either 100 or 125 megabits/second. The transfer rate is jumper selectable on a per interface basis. The forward channel receives image data and transfer status information from the EIB. The optical transmitter circuit, referred to as the back channel, has a maximum transfer rate of 5 megabits/second. The back channel transmits commands and image acquisition parameters to the EIB. The actual parameter transmission rate is approximately 833 kilobits/sec.

Acquisition parameters must be sent to each EIB to enable the acquisition of images. Image acquisition parameters are transmitted on system power-up or reset to each interface over the fiber back channel. The EIB acknowledges the parameters with a status response over the forward channel. The system software may elect to re-transmit these parameters at any time, such as after a failed acquisition or a parameter change.

The FIB interfaces to the IPB through the image source interface connector (CN1107). It provides a 12-bit image output to the IPB along with an input parity error detected signal and a strobe. The FIB receives its parameters over a 10-bit parameter bus and returns command status over a 2-bit command bus. Both functions provide a strobe signal. The FIB receives its power, clock, and power-up reset from the IPB through CN1107. As an acquisition is taking place, the EIB transmits the digital image data over the fiber forward channel. The FIB receives and reconstructs the image data and transfers it to the IPB through CN1107 in parallel form.

Both the FIB and IPB can detect errors in the transmission of the image. When this occurs, the IPB may request a re-transmission of the image or image line depending on the transfer protocol. The FIB sends a re-transmit request to the proper EIB which in turn re-transmits the image or image line.

Fiber Interface Board Block Diagram

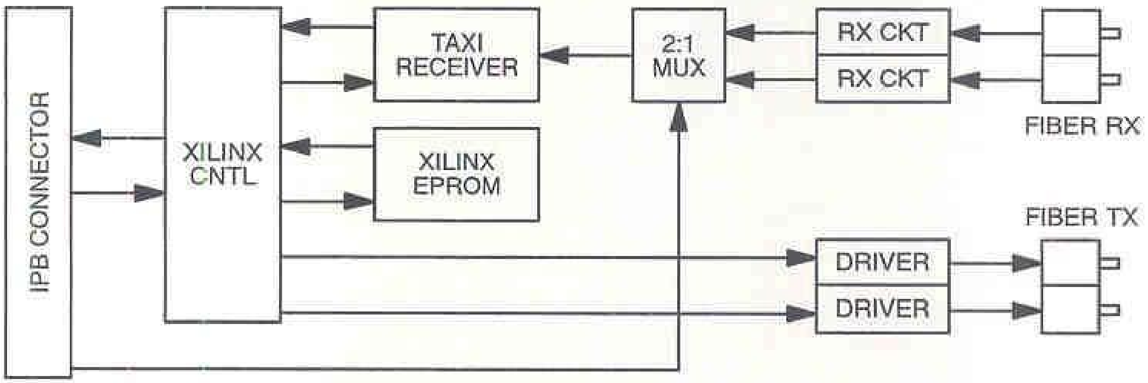
IPB CONNECTOR
XILINX CNTL
TAXI RECEIVER
XILINX EPROM
2:1 MUX
RX CKT
RX CKT
FIBER RX
FIBER TX
DRIVER
DRIVER

Figure 6-5.

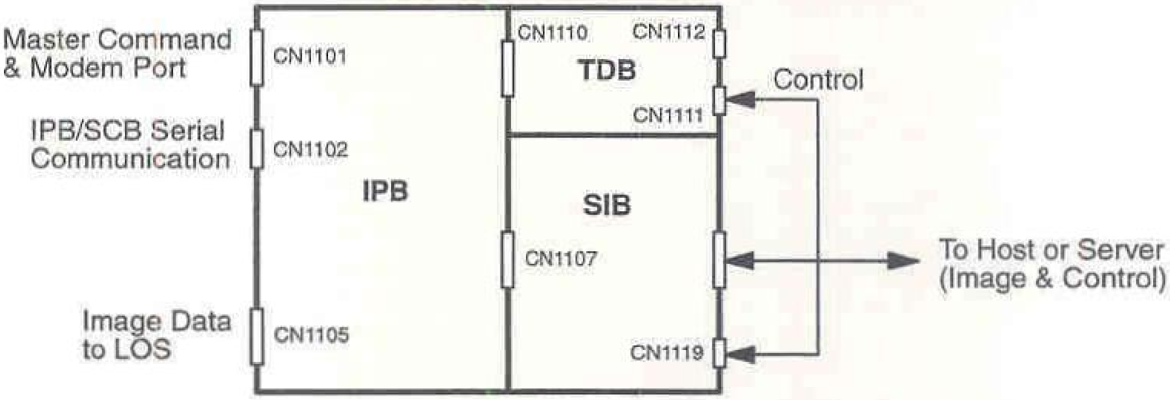
Master Command & Modem Port
IPB/SCB Serial Communication
Image Data to LOS
CN1101
CN1102
CN1105
IPB
CN1110
CN1112
TDB
CN1111
Control
SIB
CN1107
CN1119
To Host or Server (Image & Control)

Figure 6-6.

6-3-1-8. SCSI Interface Board (SIB)

The SCB connects the IPB to the SCSI bus for image acquisition and control. It is a gateway between the host computer and the 8700 which provides a SCSI bus interface for the host, an RS422 command interface to the TDB and an image source interface to the IPB. The SCSI bus may be single-ended or differential as selected by a jumper on the SIB. The SIB separates data transmissions to/from the host computer into separate interfaces required by the 8700. One path contains SuperSet commands and responses which are carried over the RS422 interface. The second path contains acquisition parameters and image data over the image source interface. The internal functions of the SIB are controlled by a Motorola 68302 microprocessor located on the SIB.

The SIB interfaces to the IPB through the image source interface connector (CN1107). It provides a 12-bit image output to the IPB along with an input parity error detected signal and a strobe. The SIB receives its parameters over a 10-bit parameter bus and returns command status over a 2-bit command bus. Both functions provide a strobe signal. The SIB receives its power, clock and power-up reset from the IPB through CN1107. The SIB connects to the TDB through an external cable from CN1119 to one of the serial inputs (refer to Figure 6-6).

The SIB is always a target to the host computer which acts as the initiator on the SCSI bus. A typical interaction between the host and the SIB begins when the host selects the SIB over the SCSI bus and then transmits a SuperSet command to the SIB. The SIB receives the SuperSet command, packetizes it and re-transmits it over the RS422 interface, unpacketizes it and sends a response to the host over the SCSI bus. If the command results in an image acquisition, then the SIB receives parameters over the back channel followed by a request for the image data. This request is passed to the host which responds by transmitting the image data over the SCSI bus to the SIB. The SIB re-transmits the image data over the image source interface to the IPB.

6-3-2. Laser Optics System (LOS)

6-3-2-1. General Description

The LOS consists of a module purchased from GSI which contains a laser diode (provided by 3M), optics, and electronics. The LOS electronics consist of an Optics Engine Board (OEB), X & Y Drivers, a Diode Driver, and an Attenuater. The LOS is attached to a film platen designed by 3M and installed into the 8700 as the Exposure Assembly.

The LOS electronics do not have a microprocessor to control their operation and require control from the SCB. They behave like a state machine, with the SCB responsible for setting up the LOS in the proper states for normal image printing or maintenance modes. The LOS provides status back to the SCB.

Corrected, 12-bit image data comes from the IPB. The image data must include data for the entire image including borders. A pair of ping-pong FIFOs are used in the LOS to allow a line-by-line transfer of data from the IPB. The LOS uses a nominal 700 Hz resonant scanner which scans each line 3 times in the X-axis. The triple pass line rate ranges from 228.0 to 238.7 Hz.

6-3-2-2. LOS Electronics

Figure 6-7 is a block diagram of the LOS electronics and its interconnection to the rest of the 8700 electronics.

The majority of the interfacing between the LOS and the rest of the system electronics is done through the OEB. The LOS gets most of its power directly from the MIB with the exception of that for the laser diode. For safety reasons, the laser diode power is provided through a relay on the MIB which is controlled directly by interlock switches on the platen and left side doors.

6-3-1-9. Video Interface Board (VIB)

The VIB converts video image data to a digital format and transfers it to the IPB over the image source interface. The video image must be a composite video signal meeting the RS170/343 or equivalent standard and is usually the output of a D/A converter. The VIB also provides an input for the clock that samples the D/A converter. The video is digitized to 9-bits/pixel. The VIB supports external clock sampling up to 110 MHz by allowing a maximum of 32 passes for one acquisition. The same Phase Locked Loop (PLL) module as used in the VEIB can be plugged into the VIB to provide the clock for synchronous digitization when an external clock is not available. The VIB can accept video signals with interlaced or progressive scan modes.

The VIB has two video interfaces for image acquisition only one of which may acquire at any one time. Each interface consists of a video input, video output and a pixel clock input. The VIB interfaces to the IPB through the image source interface connector (CN1107). It provides a 9-bit image output to the IPB along with a strobe. the VIB receives its parameters over a 10-bit parameter bus and returns command status over a 2-bit command bus. Both functions provide a strobe signal. The VIB receives its power, clock and power-up reset from the IPB through CN1107.

6-3-3. Machine Control System (MCS)

6-3-3-1. General Description

The MCS electronics control the electromechanical components which affect the movement and processing of film. The electronics also control the LOS and communicate with the IPB. Four of the 12 boards are located on the Electronics Enclosure Assy (EEA). The rest of the boards are located on the various modules of the system.

6-3-3-2. MCS Components

The MCS consists of the following 12 boards plus the motors, solenoids, and sensors distributed throughout the system.

Reference Designation	Name	Function
BRB	Barcode Reader Board	Reads bar code on supply cartridge.
BPB	Beam Power Board	Reads power of laser at platen.
FCB	Fan Control Board	Controls power to filtration fan.
LPB	Local Panel Board	Provides buttons for operator input and LCD to display menus and status information.
MFB	Multi Feed Board	Detects number of sheets entering transport from supply cartridge.
MIB	Machine Interface Board	Controls motors and solenoids.
NDB	New Densitometer Board	Reads density of D-patch on film.

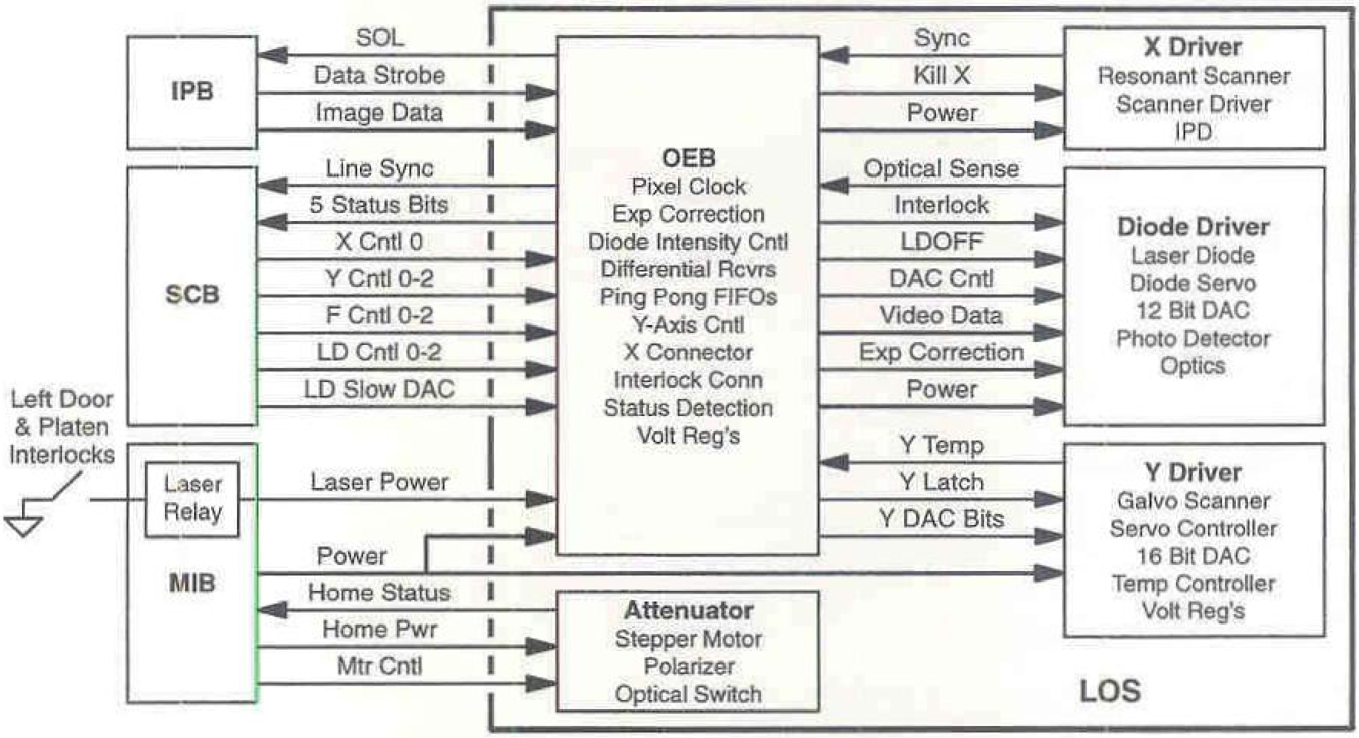
SOL
Data Strobe
Image Data
IPB
Line Sync
5 Status Bits
X Cntl 0
Y Cntl 0-2
F Cntl 0-2
LD Cntl 0-2
LD Slow DAC
SCB
Left Door
& Platen
Interlocks
Laser
Relay
Laser Power
Power
MIB
Home Status
Home Pwr
Mtr Cntl
OEB
Pixel Clock
Exp Correction
Diode Intensity Cntl
Differential Rcvrs
Ping Pong FIFOs
Y-Axis Cntl
X Connector
Interlock Conn
Status Detection
Volt Reg's
Attenuator
Stepper Motor
Polarizer
Optical Switch
Sync
Kill X
Power
X Driver
Resonant Scanner
Scanner Driver
IPD
Optical Sense
Interlock
LDOFF
DAC Cntl
Video Data
Exp Correction
Power
Diode Driver
Laser Diode
Diode Servo
12 Bit DAC
Photo Detector
Optics
Y Temp
Y Latch
Y DAC Bits
Y Driver
Galvo Scanner
Servo Controller
16 Bit DAC
Temp Controller
Volt Reg's
LOS

Figure 6-7.

6-3-3-3. EEA Electronics

Figure 6-8 shows the location of the MIB, NMB, PDB, and the SCB as well as the interface connectors to the rest of the system on the EEA. The MIB, NMB, and SCB are located behind the swing out inner panel on which the IMS boards are mounted. The PDB is mounted on the back side of the EEA.

All of the signal and control interfaces to the MIB and SCB go through shielded bulkhead connectors to minimize RFI problems. This approach also improves the modularity of the EEA.

DC power is brought into the EEA from the PMA through CN1013 to the MIB. The MIB distributes the power to the rest of the boards within the EEA. The boards are cooled by three 50 CFM fans which are mounted on a Fan Tray Assy in the lower third of the EEA. The tray is mounted so that it can be installed or removed easily.

Reference Designation	Name	Function
NMB	New Modem Board	Provides interface for MPC & phone.
PDB	Power Distribution Board	Provides power to optical switches.
PCB	Processor Comm Board	Provides communication between RPB and SCB.
RPB	Rotating Processor Board	Controls drum temperature. Communicates with SCB via PCB.
SCB	System Control Board	Controls electromechanical functions and communicates with IPB.

6-3-3-4. Machine Interface Board (MIB)

Refer to Figure 6-9 for a block diagram of the MIB.

The MIB is a dumb machine controller directed by control signals from the SCB over a 60 pin interface. The functions of the MIB are to:

- Provide power and stepper motor drivers for the +24 VDC motors and solenoids located in the system modules.
- Provide stepper motor drivers for the attenuator motor within the LOS.
- Distribute power to the boards within the EEA & LOS.
- Create a line frequency clock to the SCB for synchronizing the processor temp control from a 24 VAC input.
- Provide a relay for interrupting the power to the laser diode within the LOS under control of the system's laser safety interlock switches.

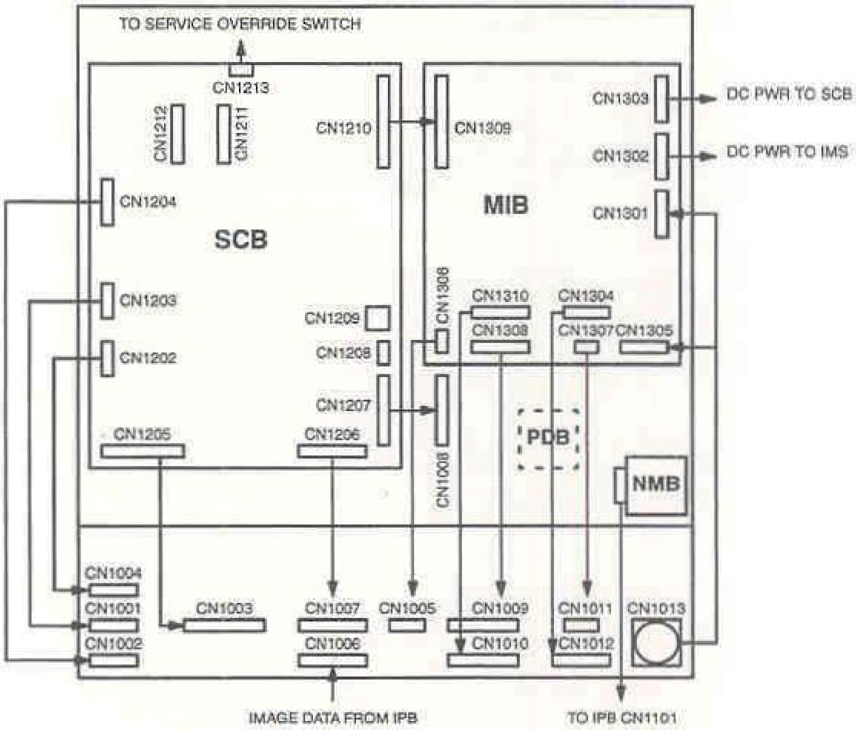
TO SERVICE OVERRIDE SWITCH
CN1213
CN1212
CN1211
CN1210
CN1309
CN1303
DC PWR TO SCB
CN1302
DC PWR TO IMS
CN1204
MIB
CN1301
SCB
CN1306
CN1310
CN1304
CN1203
CN1209
CN1308
CN1307
CN1305
CN1202
CN1208
CN1207
PDB
CN1205
CN1206
CN1008
NMB
CN1004
CN1001
CN1003
CN1007
CN1005
CN1009
CN1011
CN1013
CN1002
CN1006
CN1010
CN1012
IMAGE DATA FROM IPB
TO IPB CN1101

Figure 6-8.

6-3-3-5. System Control Board (SCB)

Refer to Figure 6-10 for a block diagram of the SCB.

The SCB is an embedded machine controller which has interfaces to all of the MCS boards (except the modem) and the control interface of the LOS. It also communicates with the IPB via a serial RS485 port.

Micro Control Unit (MCU)

The SCB uses a Motorola 68332 microprocessor. It is a highly integrated device with a 68020 core and several additional features. Among them are a CPU, a time processor unit (TPU), a system integration module (SIM), and a queued serial module (QSM). The CPU executes an enhanced 68020 instruction set. The TPU is a micro coded timer/counter which executes independently of the CPU. It executes micro coded programs from on board ROM to generate output frequencies for the system's stepper motors and is used to count non-interrupt events such as the line sync signal from the LOS. The SIM has chip selects under software control, and provides interrupt control, a watch dog timer, a programmable timer, and a clock synthesizer. The QSM contains one synchronous and one asynchronous serial port. The asynchronous serial port is used for communications with the IPB.

Memory

The SCB contains an array of universal memory sites that are jumper selectable to hold a variety of memory types. Jumpers are also used to select memory sizes between 256K and 8M bits. The memory is divided between code and data. The boot code memory is wired to the chip select boot on the 68332. The program code memory is connected to CS0. There are two types of data memory: volatile for storing working copies of system data or other temporary data, and non-volatile for system configuration parameters.

I/O

The SCB usese discrete byte wide buffers and latches. A single chip select from the MCU controls all of the digital I/O. Inputs use 74HC541 buffers. Outputs use 74HC652 latches. Analog signals are signal conditioned, buffered, and multiplexed into a 12-bit successive approximation ADC.

MIB Block Diagram

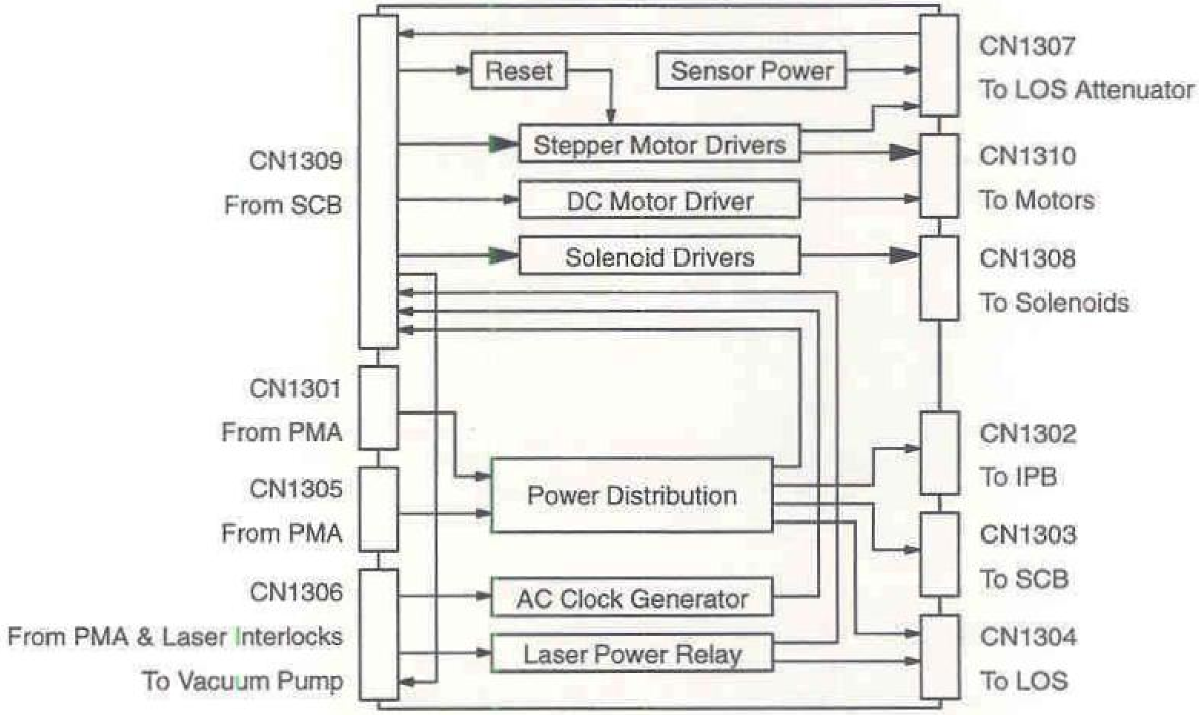
CN1309
From SCB
CN1301
From PMA
CN1305
From PMA
CN1306
From PMA & Laser Interlocks
To Vacuum Pump
Reset
Sensor Power
Stepper Motor Drivers
DC Motor Driver
Solenoid Drivers
Power Distribution
AC Clock Generator
Laser Power Relay
CN1307
To LOS Attenuator
CN1310
To Motors
CN1308
To Solenoids
CN1302
To IPB
CN1303
To SCB
CN1304
To LOS

Figure 6-9.

6-3-3-6. New Modem Board (NMB)

Refer to Figure 6-11 for a block diagram of the NMB.

The "new" modem is based upon earlier designs used in other 3M laser imagers, but has been simplified in order to fit within the EEA. It is a communication interface into the system which has two serial communication ports - a standard RS232 on a 9-pin connector and a modem on an RJ11 connector. Both interfaces to the IPB are RS232. The IPB handles the handshaking between them and allows only one of these ports to be active at a time.

The modem module on the NMB is only approved for use in the U.S. and Canada. For O.U.S. applications, the modem module is removed. An external modem is connected from an approved "medical" isolation transformer (refer to Figure 6-12). Removing the modem module makes the RJ11 input inoperative and allows either the external modem or the MPC to be connected to the RS232 input. The two versions of the NMB (one with and one without the modem module) have different part numbers.

SCB Block Diagram

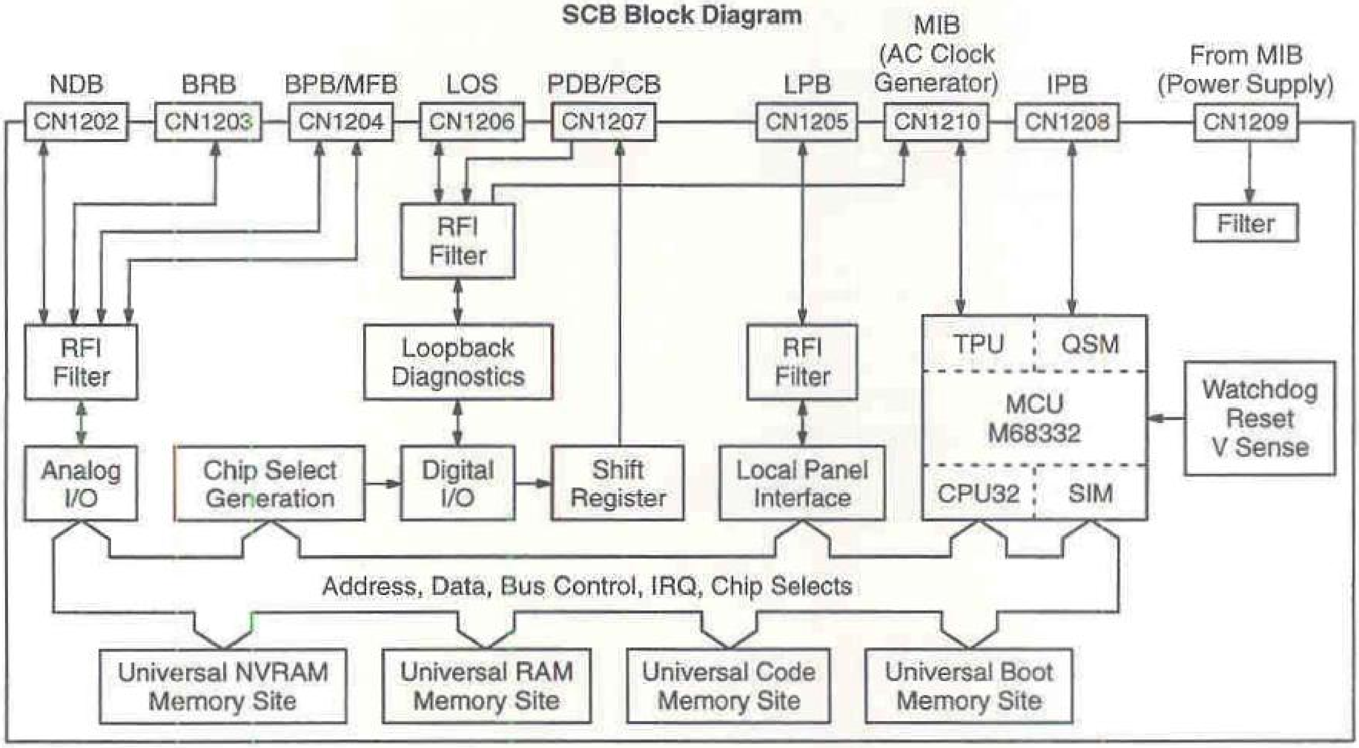
NDB
BRB
BPB/MFB
LOS
PDB/PCB
LPB
MIB (AC Clock Generator)
IPB
From MIB (Power Supply)
CN1202
CN1203
CN1204
CN1206
CN1207
CN1205
CN1210
CN1208
CN1209
RFI Filter
Filter
RFI Filter
Loopback Diagnostics
RFI Filter
TPU
QSM
MCU M68332
CPU32
SIM
Watchdog Reset V Sense
Analog I/O
Chip Select Generation
Digital I/O
Shift Register
Local Panel Interface
Address, Data, Bus Control, IRQ, Chip Selects
Universal NVRAM Memory Site
Universal RAM Memory Site
Universal Code Memory Site
Universal Boot Memory Site

Figure 6-10.

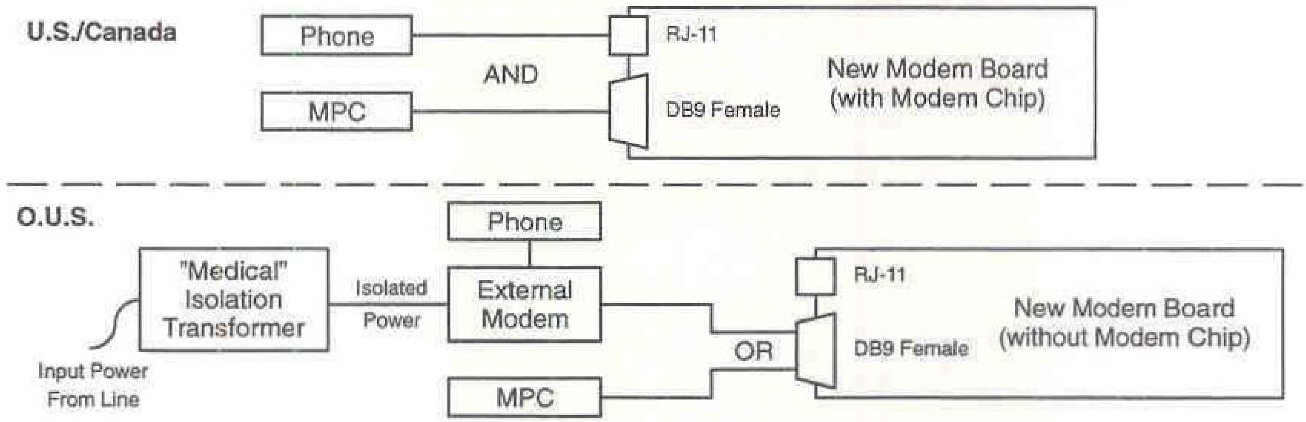
U.S./Canada
Phone
AND
MPC
RJ-11
DB9 Female
New Modem Board
(with Modem Chip)
O.U.S.
Phone
"Medical"
Isolation
Transformer
Isolated
Power
External
Modem
Input Power
From Line
OR
MPC
RJ-11
DB9 Female
New Modem Board
(without Modem Chip)

Figure 6-12.

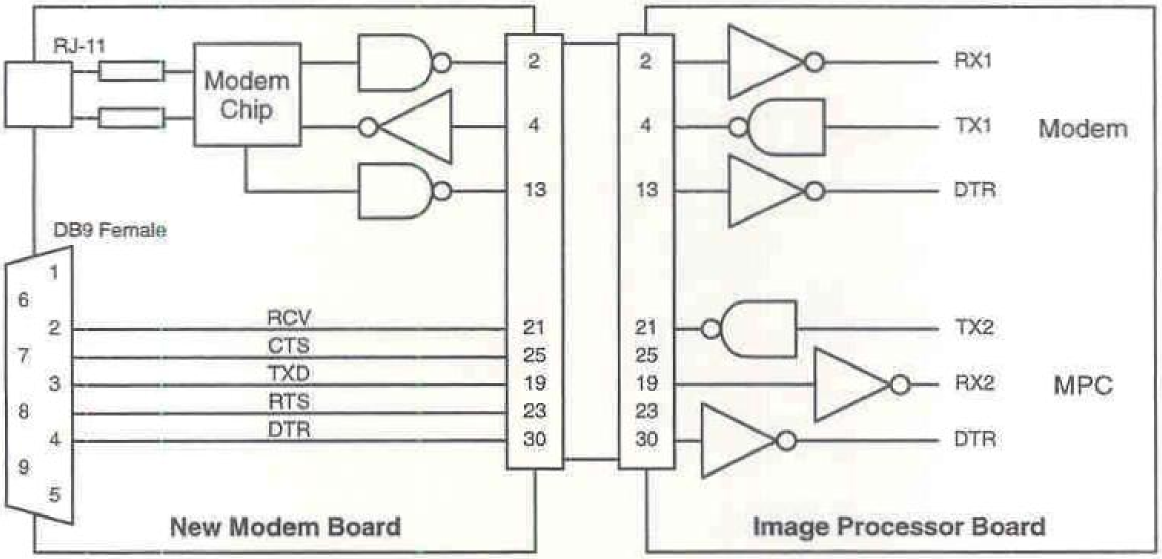
RJ-11
Modem Chip
DB9 Female
1
6
2
7
3
8
4
9
5
RCV
CTS
TXD
RTS
DTR
2
4
13
21
25
19
23
30
2
4
13
21
25
19
23
30
RX1
TX1
DTR
Modem
TX2
RX2
DTR
MPC
New Modem Board
Image Processor Board

Figure 6-11.

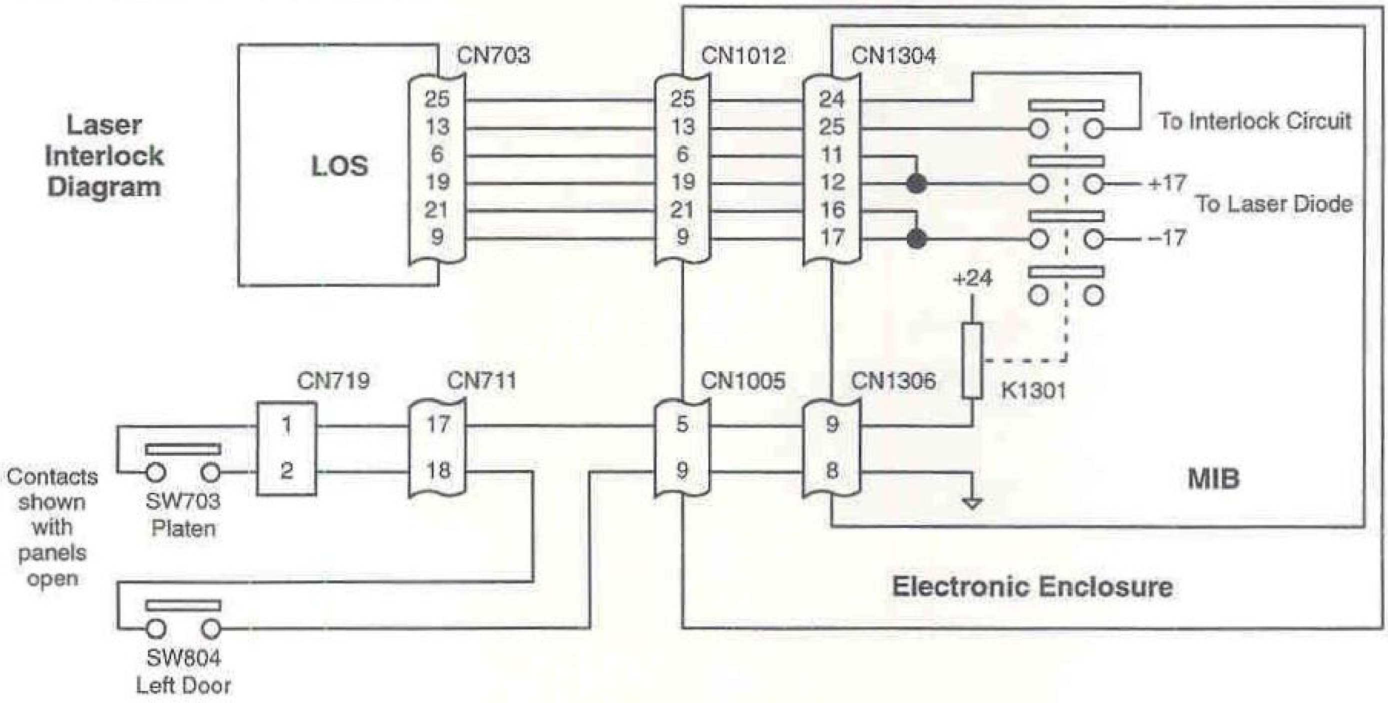
Laser Interlock Diagram
LOS
CN703
25
13
6
19
21
9
CN1012
25
13
6
19
21
9
CN1304
24
25
11
12
16
17
To Interlock Circuit
+17
To Laser Diode
−17
+24
K1301
CN719
1
2
CN711
17
18
CN1005
5
9
CN1306
9
8
MIB
Contacts shown with panels open
SW703 Platen
SW804 Left Door
Electronic Enclosure

Figure 6-13.

6-3-3-7. Interlocks

Type of Interlocks

The 8700 uses two types of interlocks. Machine interlocks interrupt specific machine processes, but not the laser diode. Laser interlocks interrupt only the laser diode.

Laser Interlock Function

Refer to Figure 6-13 for a laser interlock diagram.

There are two laser interlock switches, one for the left door (SW804) and one for the platen access door (SW703). The purpose of these interlocks is to prevent operators, manufacturing personnel, or service engineers from being exposed to any laser emission hazards after opening the left door or the platen access door. Opening either of these doors disables the laser diode.

The two laser interlocks are wired in series and directly control a relay (K1301) on the MIB whose contacts provide power (+/–17 VDC) to the LOS. Opening either the left door or platen access door will cause the relay contacts to open. The laser diode will be turned off as a result. An auxiliary set of relay contacts is used to notify the LOS logic that a door is open. The LOS logic changes the level on the interlock status signal which is read by the optics software on the SCB. The LOS logic also disables the operation of the laser diode under this condition. The machine control software does not have direct control of this function.

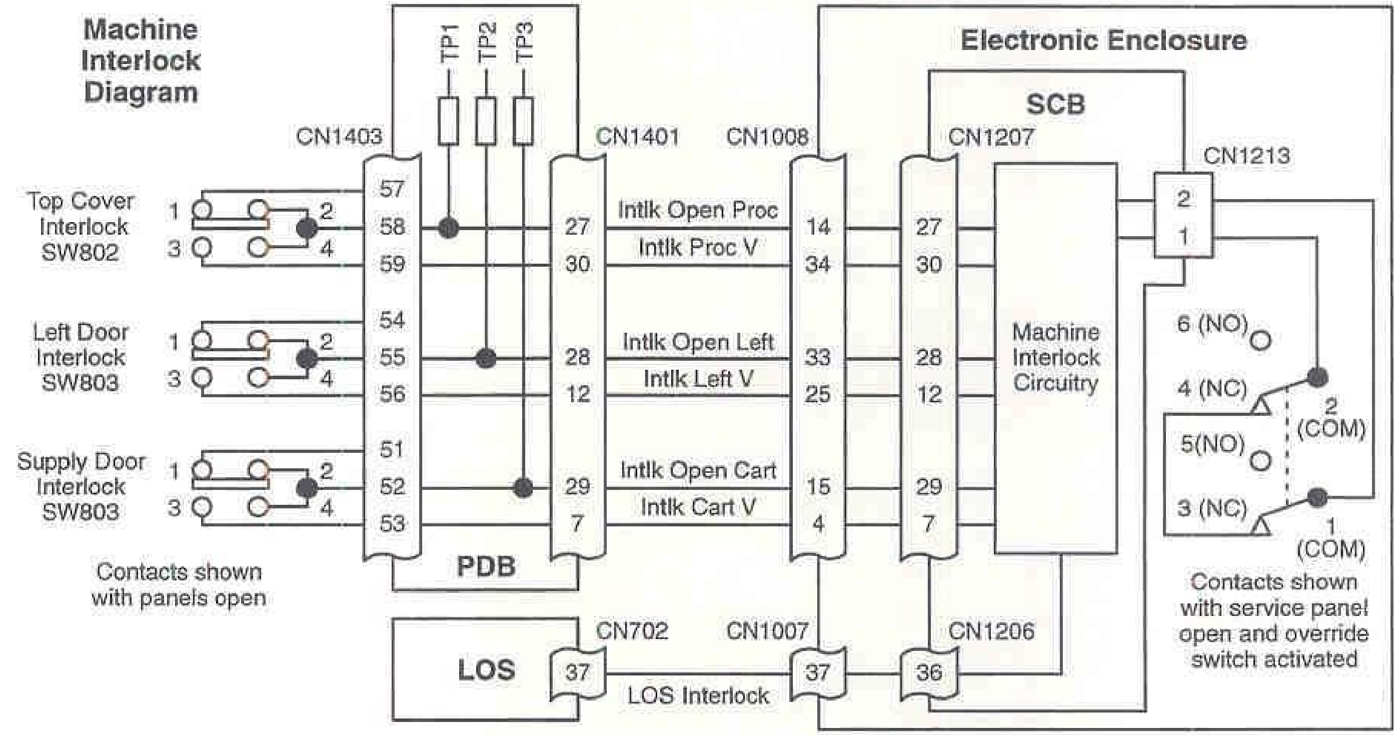
Machine Interlock Diagram
TP1
TP2
TP3
CN1403
CN1401
CN1008
Electronic Enclosure
SCB
CN1207
CN1213
Top Cover Interlock SW802
Left Door Interlock SW803
Supply Door Interlock SW803
1
2
3
4
57
58
59
54
55
56
51
52
53
27
30
28
12
29
7
Intlk Open Proc
Intlk Proc V
Intlk Open Left
Intlk Left V
Intlk Open Cart
Intlk Cart V
14
34
33
25
15
4
27
30
28
12
29
7
Machine Interlock Circuitry
2
1
6 (NO)
4 (NC)
2 (COM)
5(NO)
3 (NC)
1 (COM)
Contacts shown with panels open
PDB
Contacts shown with service panel open and override switch activated
CN702
CN1007
CN1206
LOS
37
37
36
LOS Interlock

Figure 6-14.

Machine Interlock Function

Refer to Figure 6-14 for a machine interlock diagram.

There are three machine interlock switches, one for the left door (SW803), one for the supply door (SW806), and one for the top cover (SW802). The purpose of these interlocks is to prevent operators from being exposed to any hazards after opening operator access doors. Opening the left door or supply door stops all motors below the processor module. Opening the top cover stops the processor and exit transport motors and removes power to the processor.

The machine interlock switches do not directly remove power from any active components. The system software reads the status of the interlocks on a regular basis and determines if an operator access door has been opened and disables all active components in the area affected by the open door. The DC components can be safely stopped under software control by inhibiting the multiple control signals required to energize them in the same manner as they are normally stopped. The system software and hardware have multiple features which prevent components from continuing to run independent of software control.

The AC power to the processor is interrupted through the use of a relay (K801) under the control of the processor software (refer to Figure 6-15). The relay is required in this case because a typical failure mode of the temperature control triacs is for them to short in an "on" mode which would then not respond to an off command from the software.

6-3-4. Operator Interfaces

Local Panel

The local panel supports two users and allows each to set contrast and density and to run contrast, density, and calibration tests. When the system is connected to a network, the density and contrast information is sent over the network. The supply button on the local panel closes the film cartridge and unlocks the supply door. The local panel also displays system status and error messages. In addition, it has power on and alarm indicators.

Optional Keypads

The system will support two keypads as options - the standard 969 HQ keypad and a new 8700 keypad. The 8700 keypad will provide format selection, image acquisition, and printing functions. A character representing each key is translated into the appropriate SuperSet command by the TDB. The 8700 keypad is powered by the TDB and will operate up to 200 feet from the system.

6-3-5. System Firmware and Software

Firmware

All of the boards in the IMS and the MIB and SCB in the MCS have programmable devices for which firmware has been developed.

Software

The IMS and MCS have separate operating software. The operating software for the IMS resides in PROM on the IPB and the operating software for the MCS resides in PROM on the SCB. They communicate over the serial interface between the IPB and SCB.

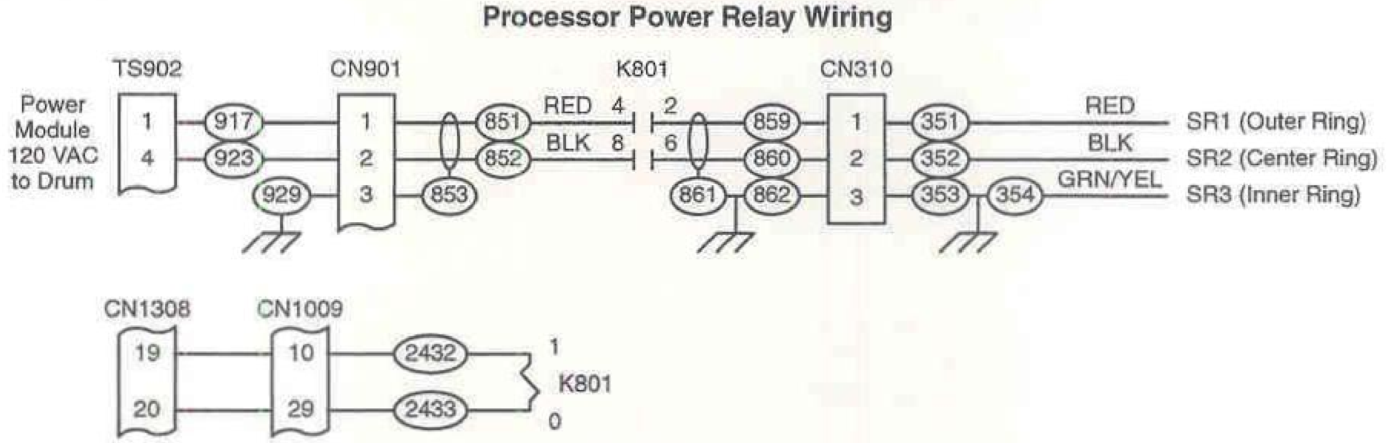
Processor Power Relay Wiring
TS902
CN901
K801
CN310
Power Module 120 VAC to Drum
1
4
917
923
929
1
2
3
851
852
853
RED 4
BLK 8
2
6
859
860
861
862
1
2
3
351
352
353
354
RED
BLK
GRN/YEL
SR1 (Outer Ring)
SR2 (Center Ring)
SR3 (Inner Ring)
CN1308
CN1009
19
20
10
29
2432
2433
1
K801
0

Figure 6-15.

Service Override

The machine interlocks can be overridden by a service switch located within the EEA which requires removing the right side panel. Replacing the panel disables the override function. The service override is required to allow a trained service engineer to test the system with panels open in order to solve field problems. The laser interlock is not overridden by the service override switch.

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8-1. Error Code Index

P#	K#	L#	952 ALM#	Description
None	K59	None	FAI,SET	Video or digital signal error during acquisition.
None	K65	L39	ALM,39	EIB (or IB) not detected by IPB.
None	None	L48	None	End of film timeout error.
None	K65	L59	ALM,39	IPB unable to load parameters to EIB (or IB).
None	K65	L59	ALM,65 FAI,SET	EIB (or IB) returned incorrect EOT, indicating that the acquire was done on the wrong input port.
None	K65	None	FAI,SET	Error detected when reading EIB (or IB) parameters from NVRAM.
None	K68	L68	ALM,68	Timeout waiting for pixels from EIB (or IB).
None	K72	L59	ALM,61	Error detected when reading EIB (or IB) parameters from NVRAM.
None	K72	L64	ALM,64	IPB detected parity error during acquisition.
None	K72	L66	ALM,66	Image memory address has crossed the boundary of available memory.
None	K72	L67	ALM,67	Too many pixels received from EIB (or IB).
None	K72	None	FAI,SET	IMS system memory (not input module memory) error occurred during acquisition.

P#	K#	L#	952 ALM#	Description
None	K203	L75	None	Local panel failed.
None	K85	L85	FAI,MOV FAI,BSY	Image memory full.
None	None	L111	None	Cartridge feed roller open failed.
P116	K202	L116	ALM,60	Pickup arm could not be moved to proper position.
P121	K202	L121	ALM,60	Optics module attenuator error.
P122	K202	L122	ALM,60	SCB cannot communicate with optics module.
P123	K202	L123	ALM,60	Optics module temperature error.
P126	K202	L126	ALM,60	SCB unable to detect EOL signal from optics module.
P130	K215	None	ALM,14	Supply door open.
P132	K215	None	ALM,12	No supply cartridge.
P133	K204	None	FLO	Less than 20 sheets remain in supply cartridge.
P134	K218	None	ALM,10 ALM,16	Supply cartridge empty.
P139	K209	L139	ALM,31	Bad bar code.
P145	K209	L145	ALM,31	Unsupported media type.

P#	K#	L#	952 ALM#	Description
P146	K209	L145	ALM,31	Wrong media size.
P151	K202	L151	ALM,60	Optics module PLL error.
P154	K202	L154	ALM,60	NVRAM error.
P161	K211	L161	ALM,21	Film jammed on multifeed detector.
P163	K211	L163	ALM,22	Film jammed after multifeed detector and before platen entrance sensor.
P164	K211	L164	ALM,23	Film jammed on platen entrance or exit sensor.
P165	K211	L165	ALM,26	Film jammed on mid transport sensor.
P166	None	L166	None	Multiple pickup attempts.
P171	None	L171	None	Supply door failed to open.
P173	K215	None	ALM,16	Platen door open.
P176	K210	L176	ALM,30	Supply cartridge could not be opened.
P177	K210	L177	ALM,31	Supply cartridge could not be closed.
P178	K215	L178	ALM,16	Top cover open.
P179	K215	None	ALM,16	Left side door open.
P202	None	None	None	Service override switch out.
None	None	L200	None	Transmit parity error.

P#	K#	L#	952 ALM#	Description
None	None	L201	None	Module synchronization error.
None	None	L202	None	Transmit memory out of bounds.
P203	K202	L203	ALM,60	Service override interlock failed.
P204	K202	L204	ALM,60	Supply door interlock failed.
P205	K202	L205	ALM,60	Top cover interlock failed.
P206	K202	L206	ALM,60	Left side door interlock failed.
P208	None	L208	None	Left side door could not be opened.
None	None	L210	None	Acquire line buffer overflow.
None	None	L212	None	Handshake acquisition error.
None	None	L214	None	Line length error.
None	None	L216	None	Hardware real time error.
None	None	L217	None	Software loading real time error.
P221	K202	L221	ALM,60	Pickup top sensor failed.
P222	K202	L222	ALM,60	Pickup middle sensor failed.
P223	K202	L223	ALM,60	Film present sensor failed.
P224	K202	L224	ALM,60	Pickup motor failed.

P#	K#	L#	952 ALM#	Description
P225	K202	L225	ALM,60	Rollback rack sensor failed.
P226	K202	L226	ALM,60	Rollback home sensor failed.
P227	K202	L227	ALM,60	Rollback motor failed.
P228	K210	L176 or L177	ALM,60	Tongue depressor sensor failed.
P229	K202	L229	ALM,60	Supply door could not be opened.
P230	K202	L230	ALM,60	Cartridge pickup calibration failed.
P301	K202	L301	ALM,60	HIB version not compatible with current software.
P302	K202	L302	ALM,60	Read or write to HIB border/patch register failed.
P303	K202	L303	ALM,60	HIB lookup table memory test failed.
P304	None	None	None	HIB test print requested.
P501	K202	L501	ALM,17	Processor drum could not be moved.
P506	K202	L506	ALM,17	Processor communication error.
P507	K202	L507	ALM,17	Processor returning bad data.
P509	K202	L509	ALM,17	Processor failed to warm up in allotted time.
P510	None	L510	None	Calibration sheet printing.
P511	K222	None	ALM,17	Processor warming.

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P#	K#	L#	952 ALM#	Description
P512	None	None	None	Calibration sheet requested.
P542	K227	L542	ALM,17	Jam in processor.
P543	K211	L543	ALM,17	Jam in densitometer.
P544	K211	L544	ALM,17	Jam in exit area.
P549	None	L549	None	Processor filter not present.
P550	None	L550	None	Clean processor and replace filter.
P551	K202	L551	ALM,17	Processor heater 1 failed.
P552	K202	L552	ALM,17	Processor heater 2 failed.
P553	K202	L553	ALM,17	Processor heater 3 failed.
P554	K202	L554	ALM,17	Processor temperature too high.
P561	None	L561	None	Invalid densitomer readings.
P601	K202	L601	ALM,60	Invalid power monitor offset.
P602	K202	L602	ALM,60	Invalid power monitor range.
P603	K202	L603	ALM,60	Invalid optical density range.
P604	K202	L604	ALM,60	Invalid laser dynamic range.
P605	K202	L605	ALM,60	Attenuator test failed.

P#	K#	L#	952 ALM#	Description
P620	None	L620	ALM,57	No film model found.
P622	K202	L622	ALM,57	Corrupt film tables.
P623	None	L623	ALM,57	Bad transfer function.
P624	AIQC OFF	L624	None	Bad densitometer data.
P625	AIQC OFF	L625	None	Bad film contrast.
P631	AIQC OFF	L631	None	Film slow.
P632	AIQC OFF	L632	None	Film fast.
P633	K230	L633	None	System near calibration limits (film almost fast).
P634	K230	L634	None	System near calibration limits (film almost slow).
None	None	L635	None	Dpatch slow.
None	None	L636	None	Dpatch fast.
P910	K202 or K1	None	ALM,60	Imager detects no communication from IMS.
P913	K202	L913	ALM,60	HIB parity error.

8-2. Troubleshooting Quicksheets

This subsection is still under development. When complete, it will include quicksheets for all the error codes generated by the system. The format of these quicksheets will be similar to the format of the quicksheets included in the 969 HQ Service Manual.

8-2-1. EC39: EIB (or IB) not detected by IPB.

Local Panel Message	HQ Keypad Message	Error Log Message ■ Input Log ☐ Output Log	952 Alarm
None.	K65 Image acquire failed. Try acquiring again.	L39 EIB_NOT_DETECTED	ALM,39

Summary

The input module sent a command to the EIB on fiber "A" and did not receive a response on fiber "B".

Sequence of Events

8-2-2. EC59: IPB unable to load parameters to EIB (or IB).

8-2-3. EC64: IPB detected parity error during acquisition.

8-2-4. EC66: Image memory address has crossed the boundary of available memory.

8-2-5. EC67: Too many pixels received from EIB (or IB).

Local Panel Message	HQ Keypad Message	Error Log Message ■ Input Log ☐ Output Log	952 Alarm
None.	K72: Memory error. Try Acquiring again.	L67 FIFO_OVERFLOW	ALM,67

8-2-6. EC68: Timeout waiting for pixels from EIB (or IB).

Local Panel Message	HQ Keypad Message	Error Log Message ■ Input Log ☐ Output Log	952 Alarm
None.	K68: Image acquire failed. Try acquiring again.	L68 TIMEOUT_EIB	ALM,68

8-2-7. EC75: Local panel failed.

Local Panel Message	HQ Keypad Message	Error Log Message ☐ Input Log ■ Output Log	952 Alarm
None.	K203: The local panel is bad on laser imager X.	L75 LOCAL_PANEL_ERROR	None.

8-2-8. EC85: Image memory full.

Local Panel Message	HQ Keypad Message	Error Log Message ■ Input Log ☐ Output Log	952 Alarm
None.	K85: Image memory is full.	L85 MEM_FULL	FAI,MOV or FAI,BSY

8-2-9. EC116: Pickup arm could not be moved to proper position.

Local Panel Message	**HQ Keypad Message**	**Error Log Message** ☐ Input Log ■ Output Log	**952 Alarm**
Printer malfunction. P116	K202: Laser imager X is not operational.	L116: PICKUP_CUP_ARM_UPPER_ERROR	ALM,60

8-2-10. EC121: Optics module attenuator error.

Local Panel Message	HQ Keypad Message	Error Log Message ☐ Input Log ■ Output Log	952 Alarm
Printer malfunction. P121	K202: Laser imager X is not operational.	L121 ATTENTUATOR_ERROR	ALM,60

8-2-11. EC122: SCB cannot communicate with optics module.

Local Panel Message	**HQ Keypad Message**	**Error Log Message** ☐ Input Log ■ Output Log	**952 Alarm**
Printer malfunction. P122	K202: Laser imager X is not operational.	L122 NO_OPTICS_MODULE	ALM,60

8-2-12. EC123: Optics module temperature error.

Local Panel Message	HQ Keypad Message	Error Log Message ☐ Input Log ■ Output Log	952 Alarm
Printer malfunction. P123	K202: Laser imager X is not operational.	L123 OPTICS_TEMP_FAIL	ALM,60

8-2-13. EC126: SCB unable to detect EOL signal from optics module.

Local Panel Message	HQ Keypad Message	Error Log Message ☐ Input Log ■ Output Log	952 Alarm
Printer malfunction. P126	K202: Laser imager X is not operational.	L126 OPTICS_NO_EOL	ALM,60

8-2-14. EC130: Supply door open.

Local Panel Message	HQ Keypad Message	Error Log Message ☐ Input Log ☐ Output Log	952 Alarm
Close supply door. P130	K215: A cover is open on laser imager X.	None.	ALM,14

8-2-15. EC132: No supply cartridge.

Local Panel Message	**HQ Keypad Message**	**Error Log Message** ☐ Input Log ☐ Output Log	**952 Alarm**
Insert cartridge. P132	K215: A cover is open on laser imager X.	None.	ALM,12

8-2-16. EC133: Less than 20 sheets remain in supply cartridge.

Local Panel Message	HQ Keypad Message	Error Log Message ☐ Input Log ☐ Output Log	952 Alarm
Cartridge has less than 20 sheets remaining. P133	K204: The media is low on laser imager X.	None.	None.

8-2-17. EC134: Supply cartridge empty.

Local Panel Message	HQ Keypad Message	Error Log Message ☐ Input Log ☐ Output Log	952 Alarm
Cartridge is empty. P134	K218: Supply cartridge is empty on laser imager X.	None.	ALM,10

8-2-18. EC139: Bad bar code.

Local Panel Message	HQ Keypad Message	Error Log Message ☐ Input Log ■ Output Log	952 Alarm
Could not read barcode on cartridge. Replace cartridge. P139	K209: Problem with supply cartridge on laser imager X.	L139 BAD_BARCODE	ALM,31

8-2-19. EC151: Optics module PLL error.

Local Panel Message	HQ Keypad Message	Error Log Message ☐ Input Log ■ Output Log	952 Alarm
Printer malfunction. P151	K202: Laser imager X is not operational.	L151 OPTICS_OUT_OF_LOCK	ALM,60

8-2-20. EC154: NVRAM error.

Local Panel Message	HQ Keypad Message	Error Log Message ☐ Input Log ■ Output Log	952 Alarm
Printer malfunction. P154	K202: Laser imager X is not operational.	L154 NVRAM_ERROR	ALM,60

8-2-21. EC161: Film jammed on multifeed detector.

Local Panel Message	**HQ Keypad Message**	**Error Log Message** ☐ Input Log ■ Output Log	**952 Alarm**
Media jam at supply cartridge. Open left door and remove jam in area 1. P161 (Toggles with: Press supply button for 5 seconds to open door. This will expose XXX sheets. P138)	K211: Media is jammed in laser imager X. Check local panel.	L161 JAM_SUPPLY	ALM,21

8-2-22. EC163: Film jammed after multifeed detector and before platen entrance sensor.

Local Panel Message	**HQ Keypad Message**	**Error Log Message** ☐ Input Log ■ Output Log	**952 Alarm**
Media jam in transport. Open left door and remove jam in area 2a. P163 (Toggles with: Press supply button for 5 seconds to open door. This will expose XXX sheets. P138)	K211: Media is jammed in laser imager X. Check local panel.	L163 JAM_TO_EXPOSURE	ALM,22

8-2-23. EC164: Film jammed on platen entrance or exit sensor.

Local Panel Message	**HQ Keypad Message**	**Error Log Message** ☐ Input Log ■ Output Log	**952 Alarm**
Media jam in platen. Open left door and remove jam in area 3. P164	K211: Media is jammed in laser imager X. Check local panel.	L164 JAM_EXPOSURE	ALM,23

8-2-24. EC165: Film jammed on mid transport sensor.

Local Panel Message	HQ Keypad Message	Error Log Message ☐ Input Log ■ Output Log	952 Alarm
Media jam in transport. Open left door and remove jam in area 2b. P165	K211: Media is jammed in laser imager X. Check local panel.	L165 JAM_TO_PROCESSOR	ALM,26

8-2-25. EC166: Multiple pickup attempts.

Local Panel Message	HQ Keypad Message	Error Log Message ☐ Input Log ■ Output Log	952 Alarm
Imager has difficulty picking up media. Replace cartridge. P166	K211: Media is jammed in laser imager X. Check local panel.	L166 PICKUP_TRY with L166 DOUBLE_PICKUP or L166 NO_PICKUP	ALM,21

8-2-26. EC173: Platen door open.

Local Panel Message	**HQ Keypad Message**	**Error Log Message** ☐ Input Log ☐ Output Log	**952 Alarm**
Exposure cover is open. P173	K215: A cover is open on laser imager X.	None.	ALM,16

8-2-27. EC176: Supply cartridge could not be opened.

Local Panel Message	HQ Keypad Message	Error Log Message ☐ Input Log ■ Output Log	952 Alarm
Cartridge could not be opened. Check cartridge. P176	K210: Printer error. Check local panel on laser imager X.	L176 SUPPLY_COVER_OPEN_ERROR	ALM,30

8-2-28. EC177: Supply cartridge could not be closed.

Local Panel Message	HQ Keypad Message	Error Log Message ☐ Input Log ■ Output Log	952 Alarm
Cartridge could not be closed. Opening door will expose XXX sheets. P177 (Toggles with: Press supply button for 5 seconds to open the door. This will expose XXX sheets in the cartridge. P138)	K210: Printer error. Check local panel on laser imager X.	L177 SUPPLY_COVER_CLOSE_ERROR	ALM,31

8-2-29. EC178: Top cover open.

Local Panel Message	HQ Keypad Message	Error Log Message ☐ Input Log ☐ Output Log	952 Alarm
Top cover is open. P178	K215: A cover is open on laser imager X.	None.	ALM,16

8-2-30. EC179: Left side door open.

Local Panel Message	**HQ Keypad Message**	**Error Log Message** ☐ Input Log ☐ Output Log	**952 Alarm**
Close left door. P179	K215: A cover is open on laser imager X.	None.	ALM,16

8-2-31. EC202: Service override switch out.

Local Panel Message	HQ Keypad Message	Error Log Message ☐ Input Log ☐ Output Log	952 Alarm
Override switch is open. P202	None.	None.	None.

8-2-32. EC203: Service override interlock failed.

Local Panel Message	HQ Keypad Message	Error Log Message ☐ Input Log ■ Output Log	952 Alarm
Printer malfunction. P203	K202: Laser imager X is not operational.	L203 OVERRIDE_INTERLOCK_FAIL	ALM,60

8-2-33. EC204: Supply door interlock failed.

Local Panel Message	**HQ Keypad Message**	**Error Log Message** ☐ Input Log ■ Output Log	**952 Alarm**
Printer malfunction. P204	K202: Laser imager X is not operational.	L204 FRONT_INTERLOCK_FAIL	ALM,60

8-2-34. EC205: Top cover interlock failed.

Local Panel Message	HQ Keypad Message	Error Log Message ☐ Input Log ■ Output Log	952 Alarm
Printer malfunction. P205	K202: Laser imager X is not operational.	L205 TOP_INTERLOCK_FAIL	ALM,60

8-2-35. EC206: Left side door interlock failed.

Local Panel Message	HQ Keypad Message	Error Log Message ☐ Input Log ■ Output Log	952 Alarm
Printer malfunction. P206	K202: Laser imager X is not operational.	L206 LEFT_INTERLOCK_FAIL	ALM,60

8-2-36. EC208: Left side door could not be opened.

Local Panel Message	HQ Keypad Message	Error Log Message ☐ Input Log ■ Output Log	952 Alarm
The left door has failed to open. P208	None.	L208 LEFT_DOOR_FAIL	None

8-2-37. EC221: Pickup top sensor failed.

Local Panel Message	HQ Keypad Message	Error Log Message ☐ Input Log ■ Output Log	952 Alarm
Printer malfunction. P221	K202: Laser imager X is not operational.	L221 CARTRIDGE_TOP_SENSOR_FAILED	ALM,60

8-2-38. EC222: Pickup middle sensor failed.

Local Panel Message	HQ Keypad Message	Error Log Message ☐ Input Log ■ Output Log	952 Alarm
Printer malfunction. P222	K202: Laser imager X is not operational.	L222 CARTRIDGE_MIDDLE_SENSOR_FAIL	ALM,60

8-2-39. EC223: Film present sensor failed.

Local Panel Message	HQ Keypad Message	Error Log Message ☐ Input Log ■ Output Log	952 Alarm
Printer malfunction. P223	K202: Laser imager X is not operational.	L223 CARTRIDGE_FILM_SENSOR_FAIL	ALM,60

8-2-40. EC224: Pickup motor failed.

Local Panel Message	HQ Keypad Message	Error Log Message ☐ Input Log ■ Output Log	952 Alarm
Printer malfunction. P224	K202: Laser imager X is not operational.	L224 CARTRIDGE_PICKUP_MOTOR_FAIL	ALM,60

8-2-41. EC225: Rollback rack sensor failed.

Local Panel Message	**HQ Keypad Message**	**Error Log Message** ☐ Input Log ■ Output Log	**952 Alarm**
Printer malfunction. P225	K202: Laser imager X is not operational.	L225 CARTRIDGE_RACK_SENSOR_FAIL	ALM,60

8-2-42. EC226: Rollback home sensor failed.

Local Panel Message	**HQ Keypad Message**	**Error Log Message** ☐ Input Log ■ Output Log	**952 Alarm**
Printer malfunction. P226	K202: Laser imager X is not operational.	L226 CARTRIDGE_BAR_HOME_SENSOR_FAIL	ALM,60

8-2-43. EC227: Rollback motor failed.

Local Panel Message	**HQ Keypad Message**	**Error Log Message** ☐ Input Log ■ Output Log	**952 Alarm**
Printer malfunction. P227	K202: Laser imager X is not operational.	L227 CARTRIDGE_ROLLBACK_MOTOR_FAIL L226 CARTRIDGE_BAR_HOME_SENSOR_FAIL L225 CARTRIDGE_RACK_SENSOR_FAIL	ALM,60

8-2-44. EC228: Tongue depressor sensor failed.

Local Panel Message	**HQ Keypad Message**	**Error Log Message** ☐ Input Log ■ Output Log	**952 Alarm**
Printer malfunction. Make sure transport in area 2 is latched. P228 **and** Cartridge could not be opened. Replace cartridge. P176 **or** Cartridge could not be closed. Opening door will expose XXX sheets. P177	K210: Printer error. Check local panel on laser imager X.	L176 SUPPLY_COVER_OPEN_ERROR or L177 SUPPLY_COVER_CLOSE_ERROR	ALM,60

8-2-45. EC229: Supply door could not be opened.

Local Panel Message	HQ Keypad Message	Error Log Message ☐ Input Log ■ Output Log	952 Alarm
Supply door failed to open. P229	None.	L229 SUPPLY_DOOR_OPEN_FAIL	None.

8-2-46. EC301: HIB parity error.

Local Panel Message	HQ Keypad Message	Error Log Message ☐ Input Log ■ Output Log	952 Alarm
Printer malfunction. P301	K202: Laser imager X is not operational.	L301 HIB_VERSION_ERROR	ALM,60

8-2-47. EC302: HIB register read/write failed.

Local Panel Message	HQ Keypad Message	Error Log Message ☐ Input Log ■ Output Log	952 Alarm
Printer malfunction. P302	K202: Laser imager X is not operational.	L302 HIB_REGISTER_FAIL	ALM,60

8-2-48. EC303: HIB lookup table memory failed.

Local Panel Message	HQ Keypad Message	Error Log Message ☐ Input Log ■ Output Log	952 Alarm
Printer malfunction. P303	K202: Laser imager X is not operational.	L303 HIB_MEMORY_FAIL	ALM,60

8-2-49. EC501: Processor drum could not be moved.

Local Panel Message	HQ Keypad Message	Error Log Message ☐ Input Log ■ Output Log	952 Alarm
Printer malfunction. Lift top cover to reset processor. P501	K202: Laser imager X is not operational.	L501 PROCESSOR_DRUM_FAIL	ALM,17

8-2-50. EC506: Processor communication error.

Local Panel Message	HQ Keypad Message	Error Log Message ☐ Input Log ■ Output Log	952 Alarm
Printer malfunction. Lift top cover to reset processor. P506	K202: Laser imager X is not operational.	L506 PROCESSOR_COMM_ERROR	ALM,17

8-2-51. EC507: Processor returning bad data.

Local Panel Message	**HQ Keypad Message**	**Error Log Message** ☐ Input Log ■ Output Log	**952 Alarm**
Printer malfunction. P507	K202: Laser imager X is not operational.	L507 PROCESSOR_INV_TEMP_DATA	ALM,17

8-2-52. EC509: Processor failed to warm up in allotted time.

Local Panel Message	**HQ Keypad Message**	**Error Log Message** ☐ Input Log ■ Output Log	**952 Alarm**
Printer malfunction. P509	K202: Laser imager X is not operational.	L509 PROCESSOR_WARMUP_FAIL	ALM,17

This error can be caused by a blown heat limiter fuse. To check, measure the resistance between the following wire pairs on the RPB:

Black wires connected to J1 and J2 (disconnect one before taking measurement).

Red wires connected to JP2.

White wires connected to JP2.

8-2-53. EC511: Processor warming.

Local Panel Message	HQ Keypad Message	Error Log Message ☐ Input Log ☐ Output Log	952 Alarm
Please wait XXX minutes for processor to finish warming. P511	K222: Film processor X is not ready. Minutes to ready: TTT.	None.	None.

8-2-54. EC542: Jam in processor.

Local Panel Message	HQ Keypad Message	Error Log Message ☐ Input Log ■ Output Log	952 Alarm
Media jam at processor. Lift top cover and remove all media in area 4. P542	K211: Media is jammed in laser imager X. Check local panel.	L542 JAM_AT_PROCESSOR_INTERIOR	ALM,17

8-2-55. EC543: Jam in densitometer.

Local Panel Message	**HQ Keypad Message**	**Error Log Message** ☐ Input Log ■ Output Log	**952 Alarm**
Media jam at processor. Lift top cover and remove all media in area 4. P543	K211: Media is jammed in laser imager X. Check local panel.	L543 JAM_AT_DENSITOMETER	ALM,17

8-2-56. EC544: Jam in exit area.

Local Panel Message	HQ Keypad Message	Error Log Message ☐ Input Log ■ Output Log	952 Alarm
Media jam near exit. Lift top cover and remove jam in area 5. P544	K211: Media is jammed in laser imager X. Check local panel.	L544 JAM_TO_EXIT	ALM,17

8-2-57. EC549: Processor filter not present.

Local Panel Message	HQ Keypad Message	Error Log Message ☐ Input Log ■ Output Log	952 Alarm
Please insert filter. P549	None.	L549 FILTER_WAS_CHANGED	None.

8-2-58. EC550: Clean processor and replace filter.

Local Panel Message	HQ Keypad Message	Error Log Message ☐ Input Log ■ Output Log	952 Alarm
Preventive maintenance and cleaning recommended. Please schedule with service. (See Operator's Guide for details) P550	None.	L550 CHANGE_FILTER	None.

8-2-59. EC551: Processor heater 1 failed.

Local Panel Message	HQ Keypad Message	Error Log Message ☐ Input Log ■ Output Log	952 Alarm
Printer malfunction. P551	K202: Laser imager X is not operational.	L551 PROCESSOR_HEATER_1_FAIL	ALM,17

8-2-60. EC552: Processor heater 2 failed.

Local Panel Message	HQ Keypad Message	Error Log Message ☐ Input Log ■ Output Log	952 Alarm
Printer malfunction. P552	K202: Laser imager X is not operational.	L552 PROCESSOR_HEATER_2_FAIL	ALM,17

8-2-61. EC553: Processor heater 3 failed.

Local Panel Message	HQ Keypad Message	Error Log Message ☐ Input Log ■ Output Log	952 Alarm
Printer malfunction. P553	K202: Laser imager X is not operational.	L553 PROCESSOR_HEATER_3_FAIL	ALM,17

8-2-62. EC554: Processor temperature too high.

Local Panel Message	**HQ Keypad Message**	**Error Log Message** ☐ Input Log ■ Output Log	**952 Alarm**
Printer malfunction. P554	K202: Laser imager X is not operational.	L554 PROCESSOR_OVER_TEMP	ALM,17

8-2-63. EC561: Invalid densitometer readings.

Local Panel Message	HQ Keypad Message	Error Log Message ☐ Input Log ■ Output Log	952 Alarm
Automatic image quality control malfunction. P561	Automatic image quality control OFF.	L561 DENSITOMETER_ERROR	None.

8-2-64. EC601: Invalid power monitor offset.

Local Panel Message	HQ Keypad Message	Error Log Message ☐ Input Log ■ Output Log	952 Alarm
Printer malfunction. P601	K202: Laser imager X is not operational.	L601 INVALID_POWER_MONITOR_OFFSET	ALM,60

8-2-65. EC602: Invalid power monitor range.

Local Panel Message	HQ Keypad Message	Error Log Message ☐ Input Log ■ Output Log	952 Alarm
Printer malfunction. P602	K202: Laser imager X is not operational.	L602 INVALID_POWER_MONITOR_RANGE	ALM,60

8-2-66. EC603: Invalid optical density range.

Local Panel Message	**HQ Keypad Message**	**Error Log Message** ☐ Input Log ■ Output Log	**952 Alarm**
Printer malfunction. P603	K202: Laser imager X is not operational.	L603 INVALID_OPT_DENSITY_RANGE	ALM,60

8-2-67. EC604: Invalid laser dynamic range.

Local Panel Message	HQ Keypad Message	Error Log Message ☐ Input Log ■ Output Log	952 Alarm
Printer malfunction. P604	K202: Laser imager X is not operational.	L604 INVALID_LASER_DYN_RANGE	ALM,60

8-2-68. EC605: Attenuator test failed.

Local Panel Message	HQ Keypad Message	Error Log Message ☐ Input Log ■ Output Log	952 Alarm
Printer malfunction. P605	K202: Laser imager X is not operational.	L605 ATTEN_TEST_FAIL	ALM,60

8-2-69. EC620: No film model found.

Local Panel Message	HQ Keypad Message	Error Log Message ☐ Input Log ■ Output Log	952 Alarm
Printer malfunction. P620	None.	L620 NO_FILM_MODEL	ALM,57

8-2-70. EC622: Corrupt film tables.

Local Panel Message	HQ Keypad Message	Error Log Message ☐ Input Log ■ Output Log	952 Alarm
Printer malfunction. P622	K202: Laser imager X is not operational.	L622 CORRUPT_FILM_TABLES	ALM,57

8-2-71. EC623: Bad transfer function.

Local Panel Message	**HQ Keypad Message**	**Error Log Message** ☐ Input Log ■ Output Log	**952 Alarm**
Printer malfunction. P623	None.	L623 BAD_TRANSFER_FUNCTION	ALM,57

8-2-72. EC624: Bad densitometer data.

Local Panel Message	**HQ Keypad Message**	**Error Log Message** ☐ Input Log ■ Output Log	**952 Alarm**
Automatic image quality control malfunction. P624	Automatic image quality control OFF.	L624 BAD_DENSITOMETER_READINGS	None.

8-2-73. EC625: Bad film contrast.

Local Panel Message	HQ Keypad Message	Error Log Message ☐ Input Log ■ Output Log	952 Alarm
Automatic image quality control is off. P625	Automatic image quality control OFF.	L625 BAD_FILM_CONTRAST	None.

8-2-74. EC631: Film slow.

Local Panel Message	HQ Keypad Message	Error Log Message ☐ Input Log ■ Output Log	952 Alarm
Automatic image quality control is off. P631	Automatic image quality control OFF.	L631 FILM_SLOW	None.

8-2-75. EC632: Film fast.

Local Panel Message	HQ Keypad Message	Error Log Message ☐ Input Log ■ Output Log	952 Alarm
Automatic image quality control is off. P632	Automatic image quality control OFF.	L632 FILM_FAST	None.

8-2-76. EC633: System near calibration limits (film almost fast).

Local Panel Message	HQ Keypad Message	Error Log Message ☐ Input Log ■ Output Log	952 Alarm
System is operating near calibration limits. P633	K230: System operating near calibration limits.	L633 FILM_ALMOST_FAST	None.

8-2-77. EC634: System near calibration limits (film almost slow).

Local Panel Message	**HQ Keypad Message**	**Error Log Message** ☐ Input Log ■ Output Log	**952 Alarm**
System is operating near calibration limits. P634	K230: System operating near calibration limits.	L634 FILM_ALMOST_SLOW	None.

8-2-78. EC635: Dpatch slow.

Local Panel Message	HQ Keypad Message	Error Log Message ☐ Input Log ■ Output Log	952 Alarm
None.	None.	L635 MIDTONE_SLOW	None.

8-2-79. EC636: Dpatch fast.

Local Panel Message	**HQ Keypad Message**	**Error Log Message** ☐ Input Log ■ Output Log	**952 Alarm**
None.	None.	L636 MIDTONE_FAST	None.

8-2-80. EC910: Imager detects no communication from IMS.

Local Panel Message	**HQ Keypad Message**	**Error Log Message** ☐ Input Log ☐ Output Log	**952 Alarm**
Printer malfunction. P910	K1: The laser imager is not communicating. **or** K202: Laser imager X is not operational.	None.	ALM,60

8-2-81. EC913: HIB parity error.

Local Panel Message	HQ Keypad Message	Error Log Message ☐ Input Log ■ Output Log	952 Alarm
Printer malfunction. P913	K202: Laser imager X is not operational.	L913 HIB_PARITY_ERROR	ALM,60

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9-1. Illustrated Parts Breakdown (IPB)

This Illustrated Parts Breakdown (IPB) section contains the information necessary to locate and identify assemblies, sub–assemblies, and specific parts of the DryView 8700 Laser Imager.

Part Numbers

All components available on a replacement basis are listed with their 3M identification number. The parts identification list opposite each illustration provides the description adequate to identify components. If the component is available only as part of the next higher assembly, the description column provides the next higher assembly description or identification number.

Locating and Identifying a Part

If physical appearance and general location of an item are known, refer to the view for the assembly or sub–assembly and locate the item on the exploded view. If machine serial numbers determine a component, the part ID numbers in this manual are from the most current data available. Make sure part ID numbers for your component have not been amended by changes and updates made to your machine. Verify the serial number of your laser imager on the serial plate located insided the left door.

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**Figure 9-1. Machine and Skins Assembly
(Screen 1 of 2)**

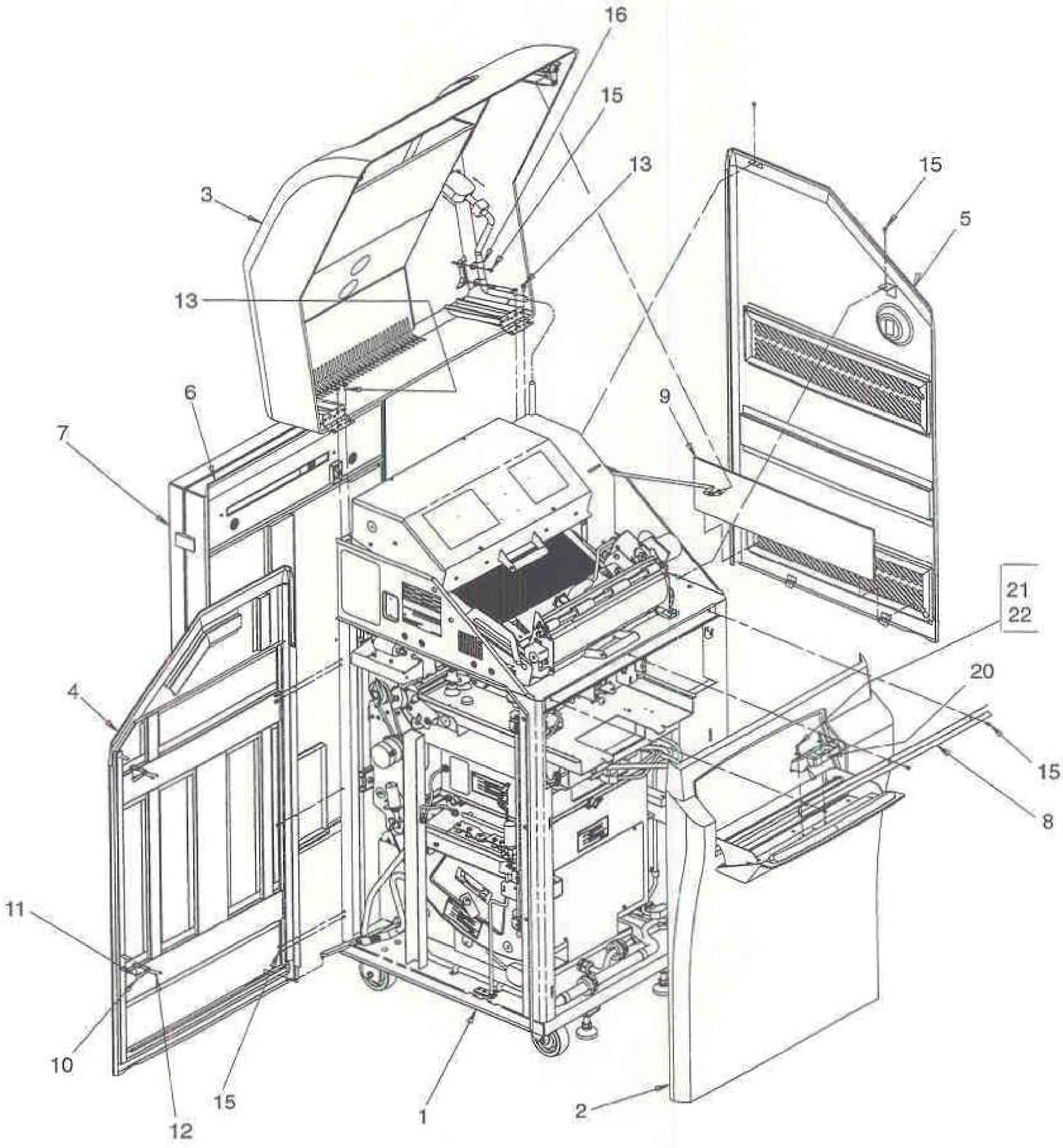
16
15
13
3
15
5
13
6
9
7
21
22
20
4
15
8
11
10
15
12
1
2

Figure 9-1. Machine and Skins assembly (Screen 2 of 2)

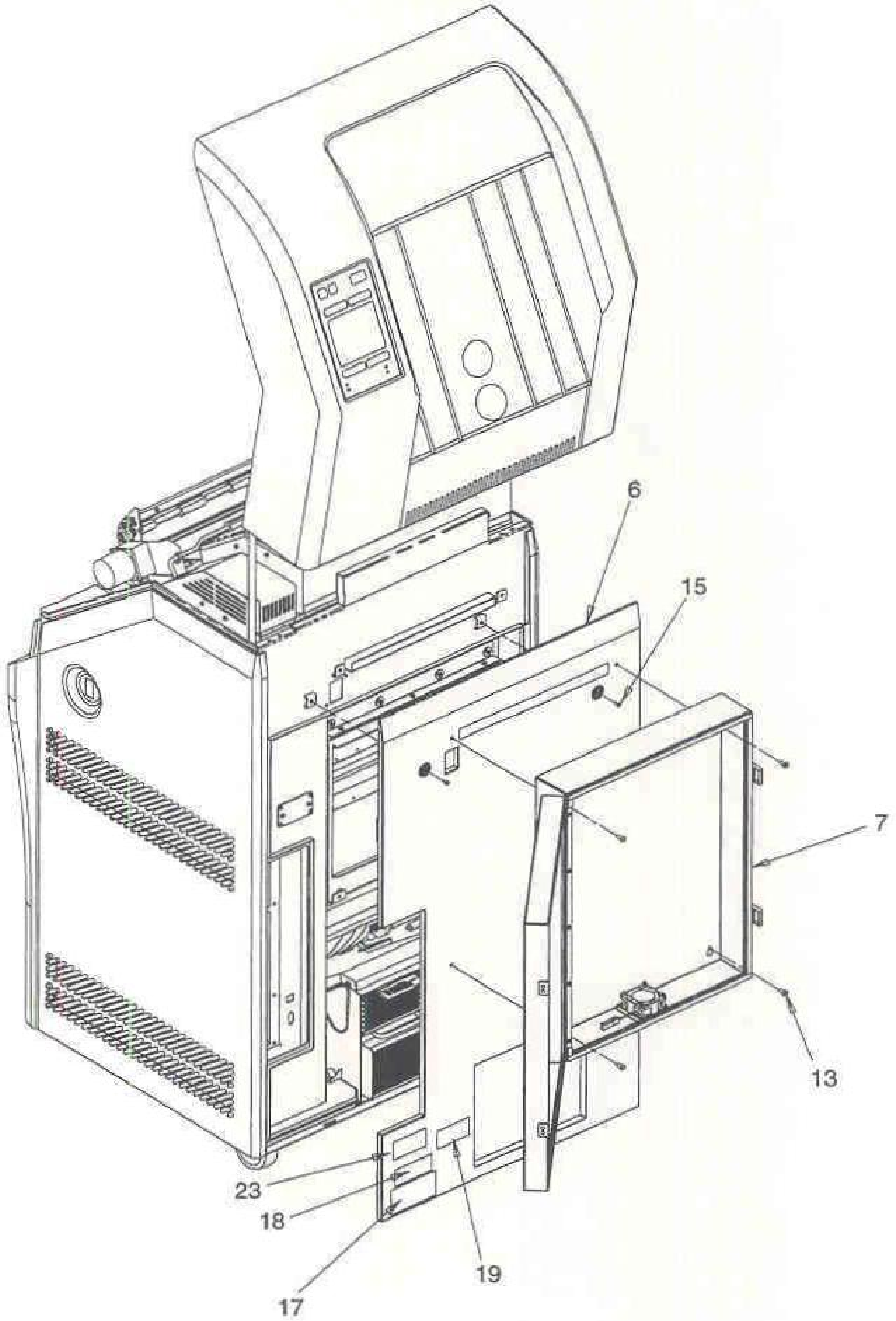
6
15
7
13
23
18
17
19

Figure 9-1. Machine and Skins Assembly

Item No.	Part Number	Description	Qty
0	Not Available	MACHINE AND SKINS ASSEMBLY	1
1A	Not Available	MACHINE ASSEMBLY, Standalone (See Figure 9-2)	1
1B	Not Available	MACHINE ASSEMBLY, Dual (See Figure 9-2)	1
2A	78-8094-5713-4	FRONT PANEL ASSEMBLY (3M and OEM except GE) (See Figure 9-4)	1
2B	78-8094-9031-7	FRONT PANEL ASSEMBLY (GE only) (See Figure 9-4)	1
3A	78-8094-5339-8	HOOD ASSEMBLY (3M) (See Figure 9-3)	1
3B	78-8094-9024-2	HOOD ASSEMBLY (GE) (See Figure 9-3)	1
3C	78-8094-9025-9	HOOD ASSEMBLY (OEM except GE) (See Figure 9-3)	1
4A	78-8092-4073-8	PANEL, Access (3M and OEM except GE)	1
4B	78-8094-9041-6	PANEL, Access (GE only)	1
5A	78-8092-4071-2	PANEL, Right (3M and OEM except GE)	1
5B	78-8094-9043-2	PANEL, Right (GE only)	1
6A	78-8092-4072-0	PANEL, Rear (3M and OEM except GE)	1
6B	78-8094-9045-7	PANEL, Rear (GE only)	1
7A	78-8094-5811-6	FILTER HOUSING ASSEMBLY (3M and OEM except GE) (See Figure 9-6)	1
7B	78-8094-9035-8	FILTER HOUSING ASSEMBLY (GE only) (See Figure 9-6)	1
8	78-8095-9538-8	PLATE, Locking	1
9	78-8094-5979-1	FILTER, Air, Right Side Panel	1
10	26-1006-7882-5	BEARING, .1265 ID X .1895 OD X.312	2
11	78-8094-5837-1	SHAFT, Lock	2
12	78-8656-4000-3	RING, Retaining, External, E-Ring	4
13	26-1003-7123-1	SCREW, Mach, Pan Head, Phil, Metric, M5 X 0.8 X 10.0	8
15	26-1003-7120-7	SCREW, Mach, Pan Head, Phil, Metric, M4 X 0.7 X 8.0	14
16	Not Available	CLAMP, Cable,	2
17	Not Available	DECAL, Laser, CLI (International)	1
18	Not Available	LABEL, Warning, (DISCONNECT POWER)	1
19	Not Available	LABEL, Certificate (BRH)	1
20	78-8094-5913-0	BRACKET, Catch, FD	1
21	26-1003-7121-5	SCREW, Mach, Pan Head, Phil, Metric, M4 X 0.7 X 10.0	2
22	26-1008-9102-2	WASHER, Metric, Plain, M4	2
23	78-8095-9423-3	LABEL, FCC	1
24	26-1011-6809-9	WASHER, Lock, Metric, External Tooth, Stl, Blk, Zinc (Not Shown)	1

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Figure 9-2. Machine Assembly
(Screen 1 of 12)

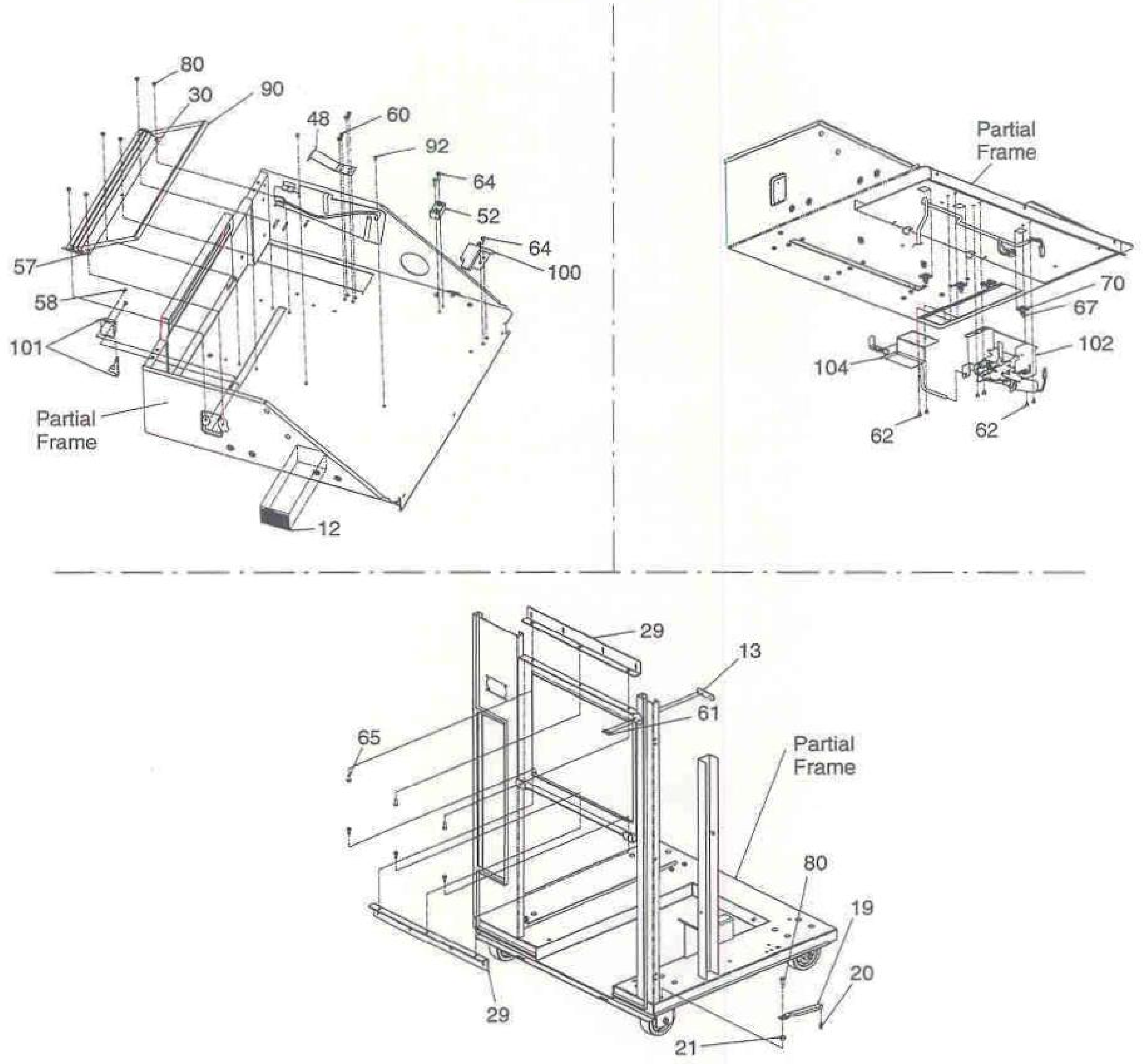

80
30
90
48
60
92
64
52
64
100
57
58
101
Partial Frame
12
Partial Frame
70
67
102
104
62
62
29
13
61
65
Partial Frame
80
19
20
29
21

Figure 9-2. Machine Assembly
(Screen 2 of 12)

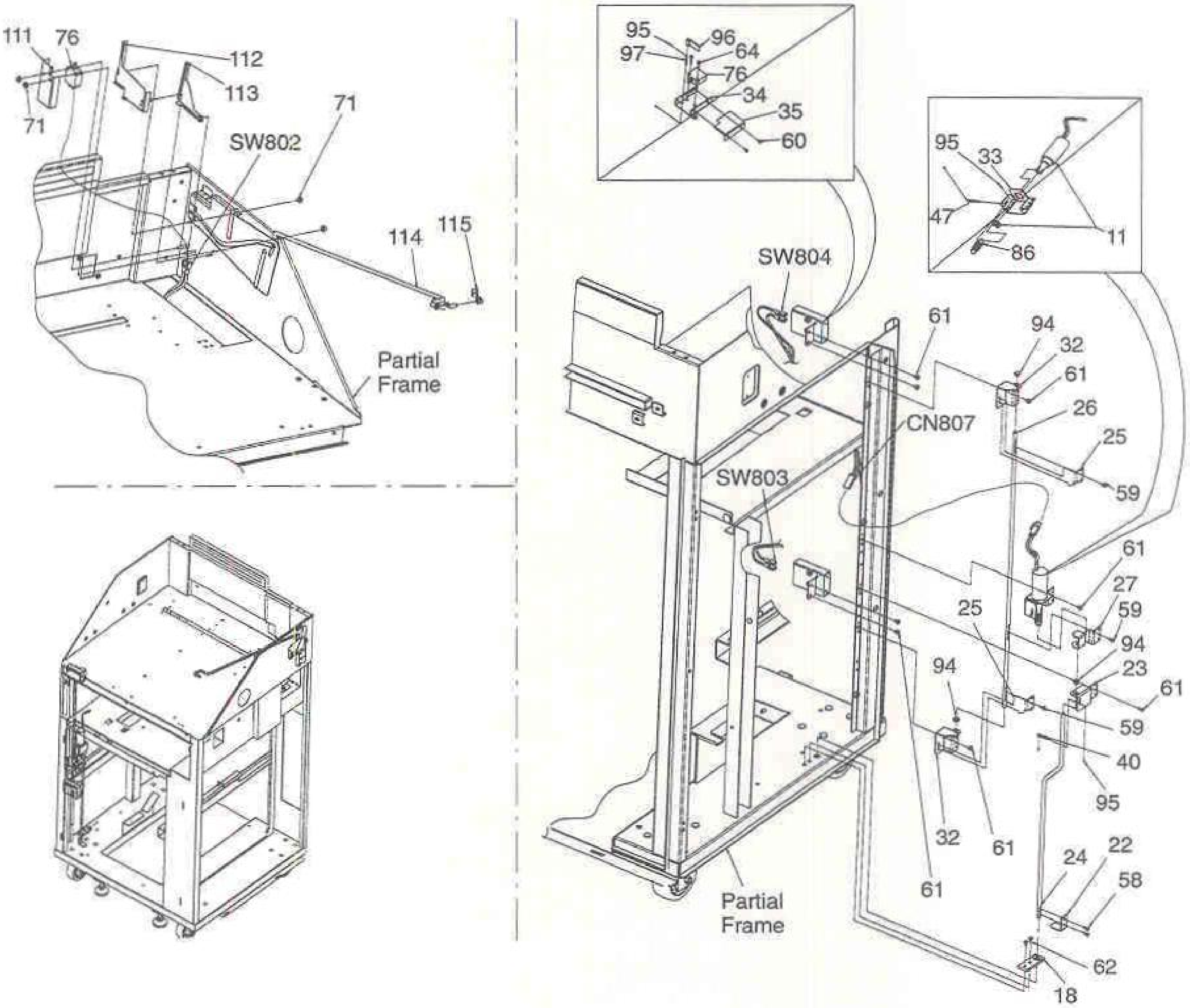

111
76
112
113
71
71
SW802
114
115
Partial Frame
95
96
97
64
76
34
35
60
95
33
47
11
86
SW804
61
94
32
61
26
25
CN807
59
SW803
61
27
25
59
94
94
23
61
59
40
95
32
61
61
24
22
58
62
18
Partial Frame

Figure 9-2. Machine Assembly
(Screen 3 of 12)

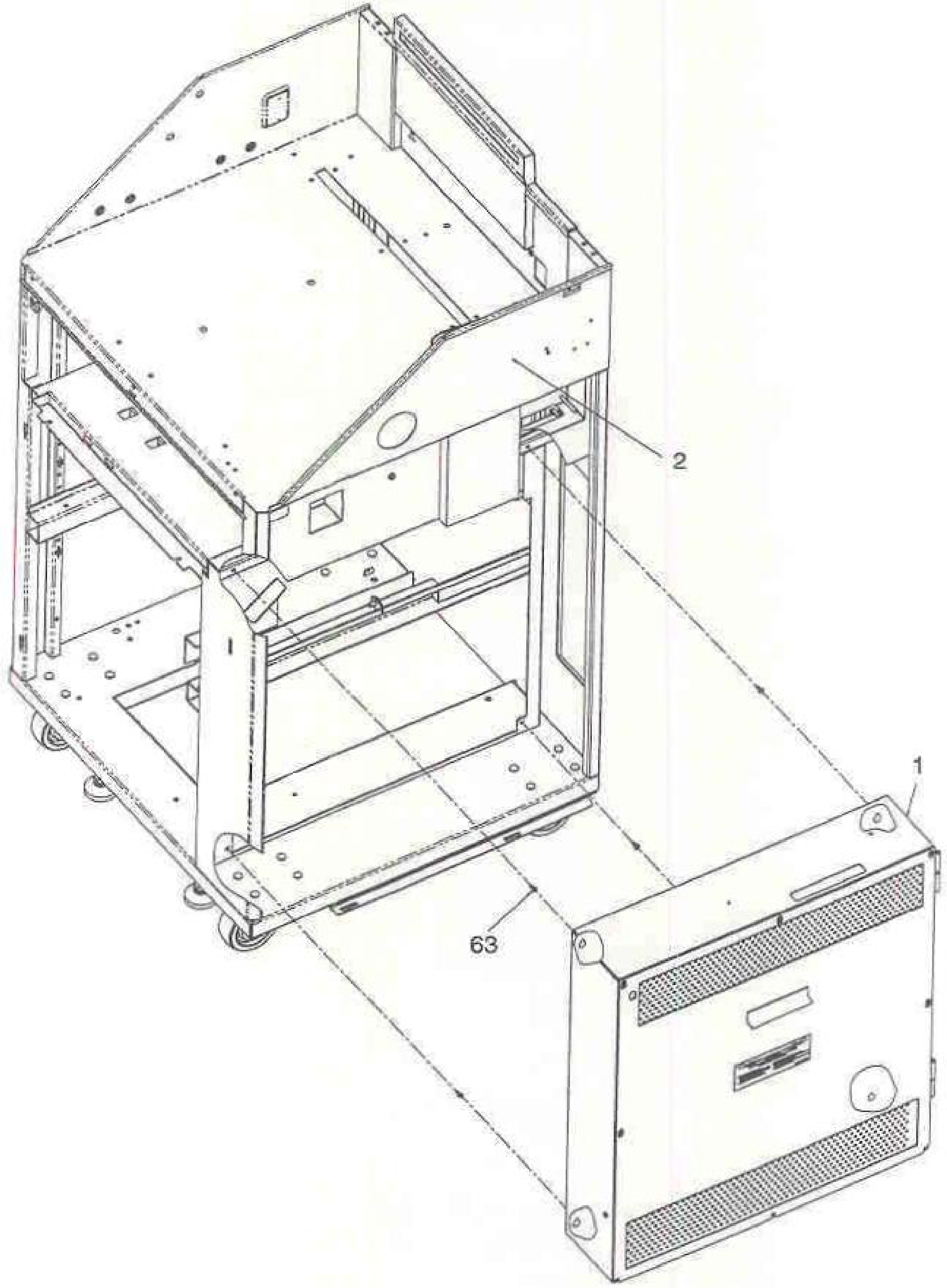


Figure 9-2. Machine Assembly
(Screen 4 of 12)

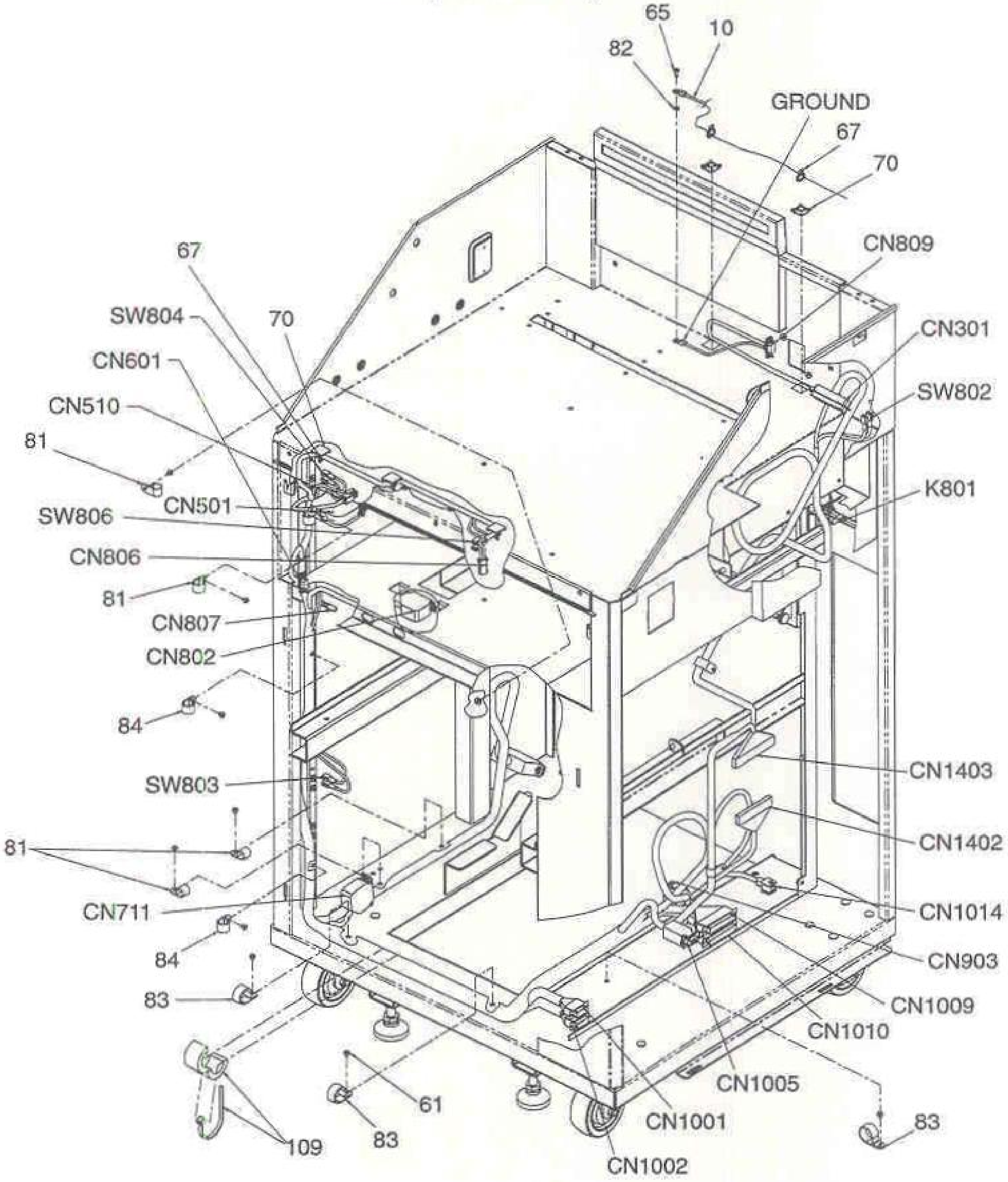

65
10
82
GROUND
67
70
CN809
67
CN301
SW804
70
SW802
CN601
CN510
81
K801
CN501
SW806
CN806
81
CN807
CN802
84
CN1403
SW803
CN1402
81
CN711
CN1014
84
CN903
83
CN1009
CN1010
CN1005
61
83
CN1001
83
109
83
CN1002

Figure 9-2. Machine Assembly
(Screen 5 of 12)

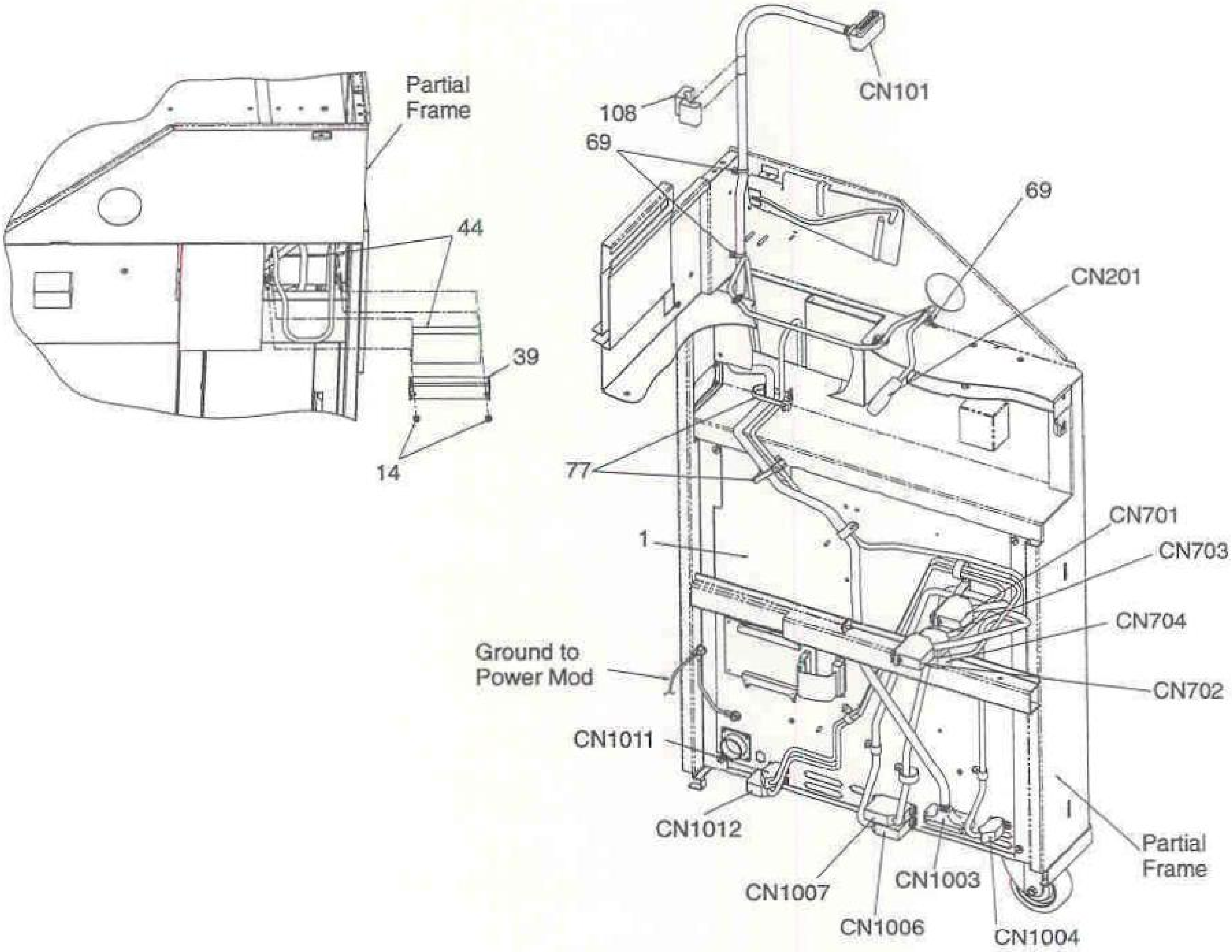
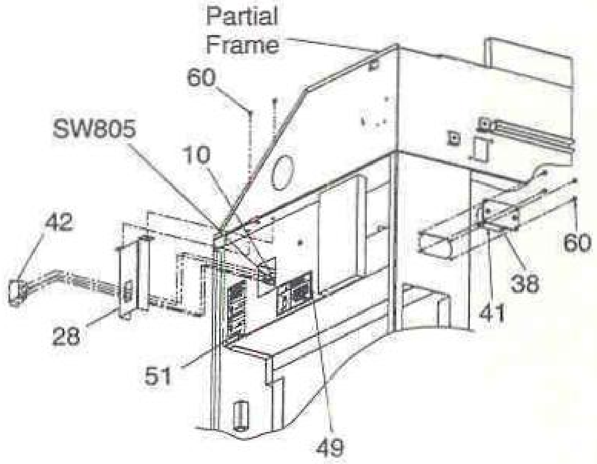

Partial Frame
44
39
14
CN101
108
69
69
CN201
77
1
CN701
CN703
CN704
Ground to Power Mod
CN702
CN1011
CN1012
Partial Frame
CN1007
CN1003
CN1006
CN1004

Figure 9-2. Machine Assembly
(Screen 6 of 12)


Partial Frame
60
SW805
10
42
60
38
41
28
51
49

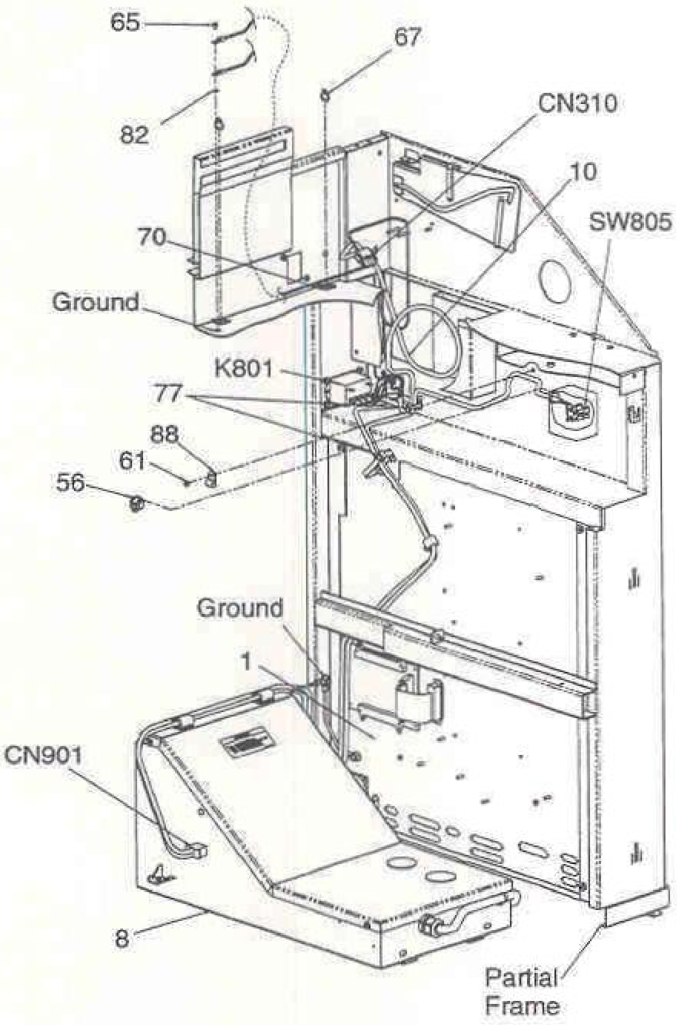

65
67
CN310
82
10
SW805
70
Ground
K801
77
88
61
56
Ground
1
CN901
8
Partial Frame

**Figure 9-2. Machine Assembly
(Screen 7 of 12)**

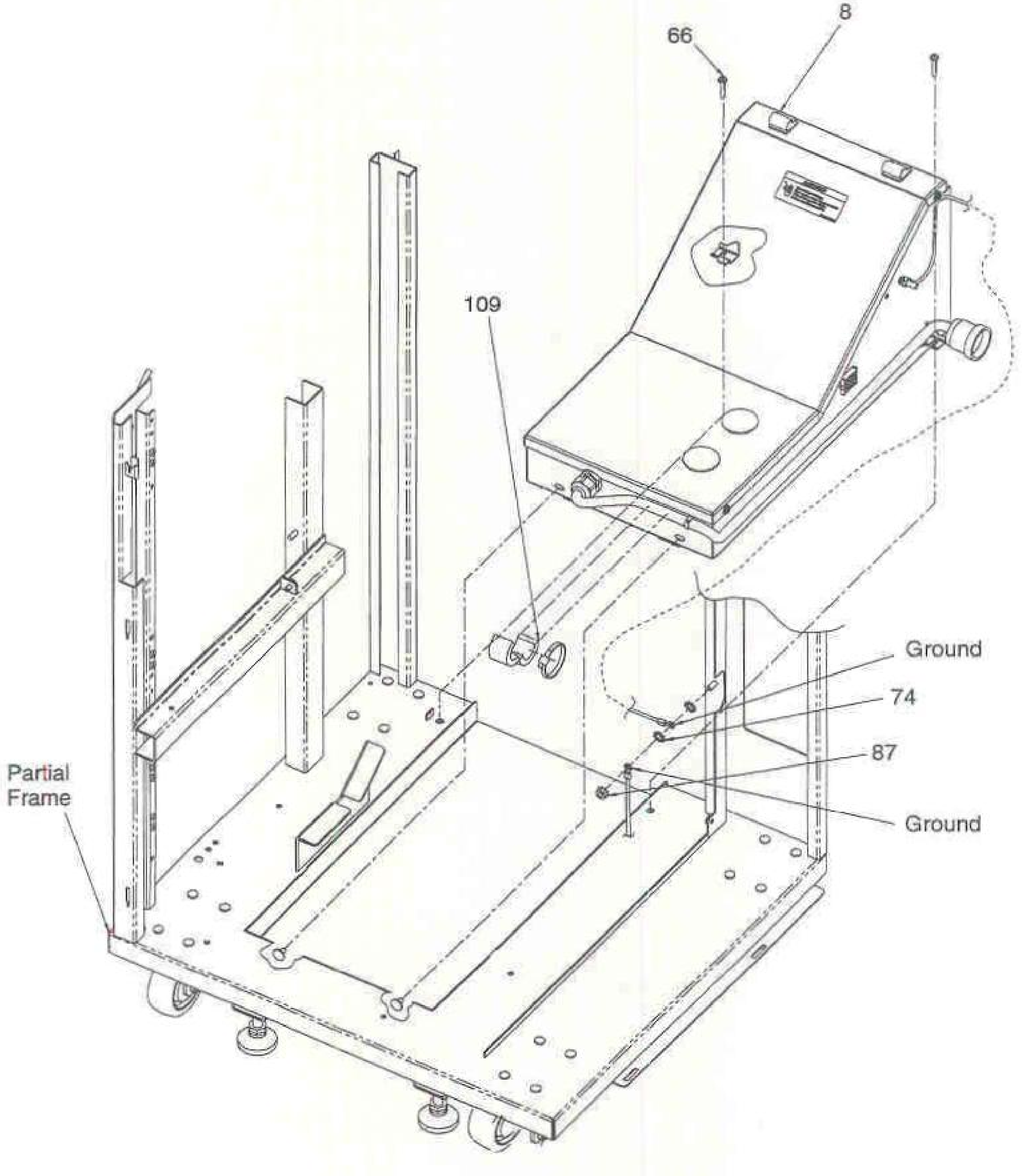

66
8
109
Ground
74
87
Ground
Partial
Frame

Figure 9-2. Machine Assembly
(Screen 8 of 12)

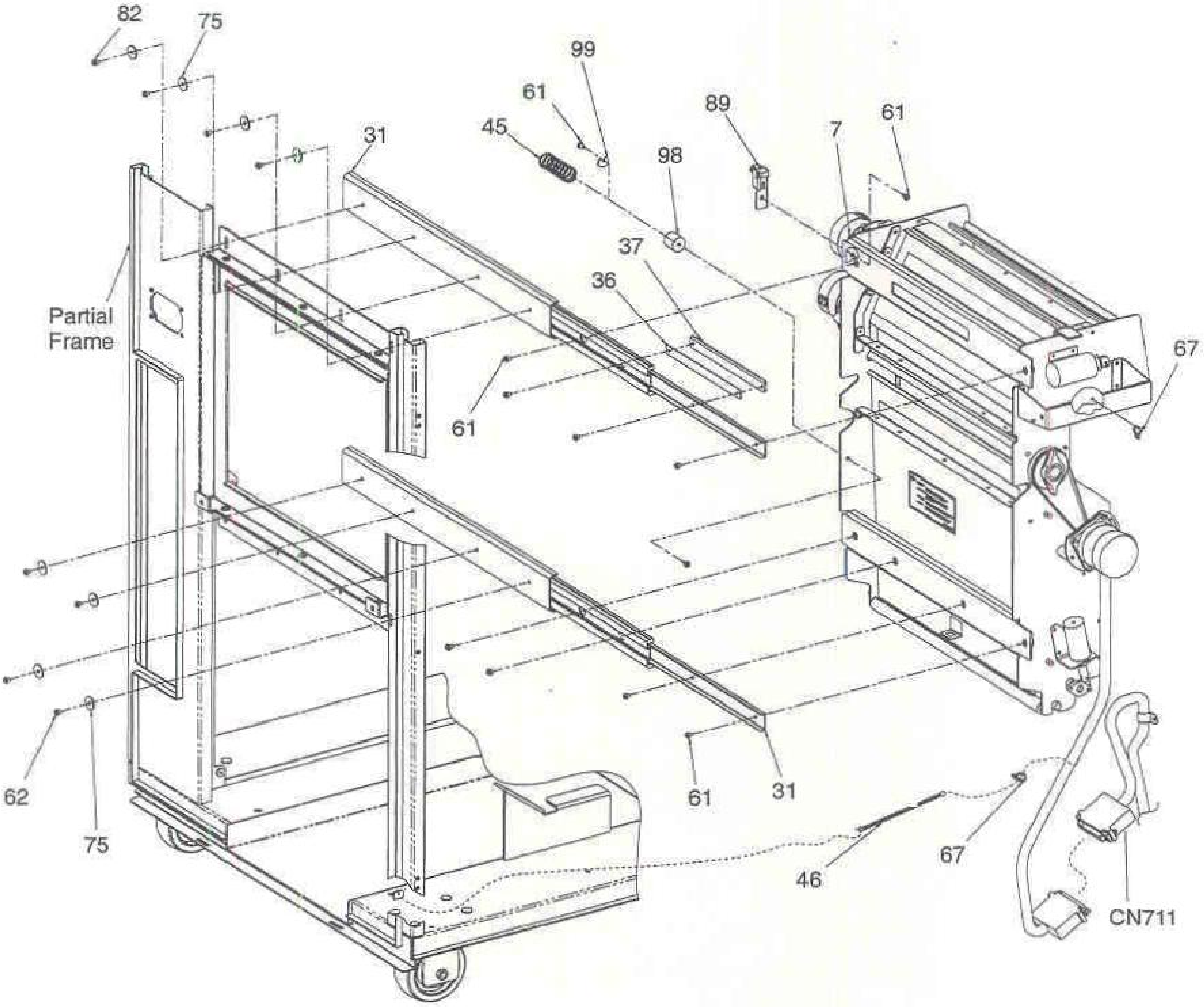

82
75
99
61
89
61
31
45
98
7
37
36
Partial Frame
67
61
62
75
61
31
67
46
CN711

Figure 9-2. Machine Assembly
(Screen 9 of 12)

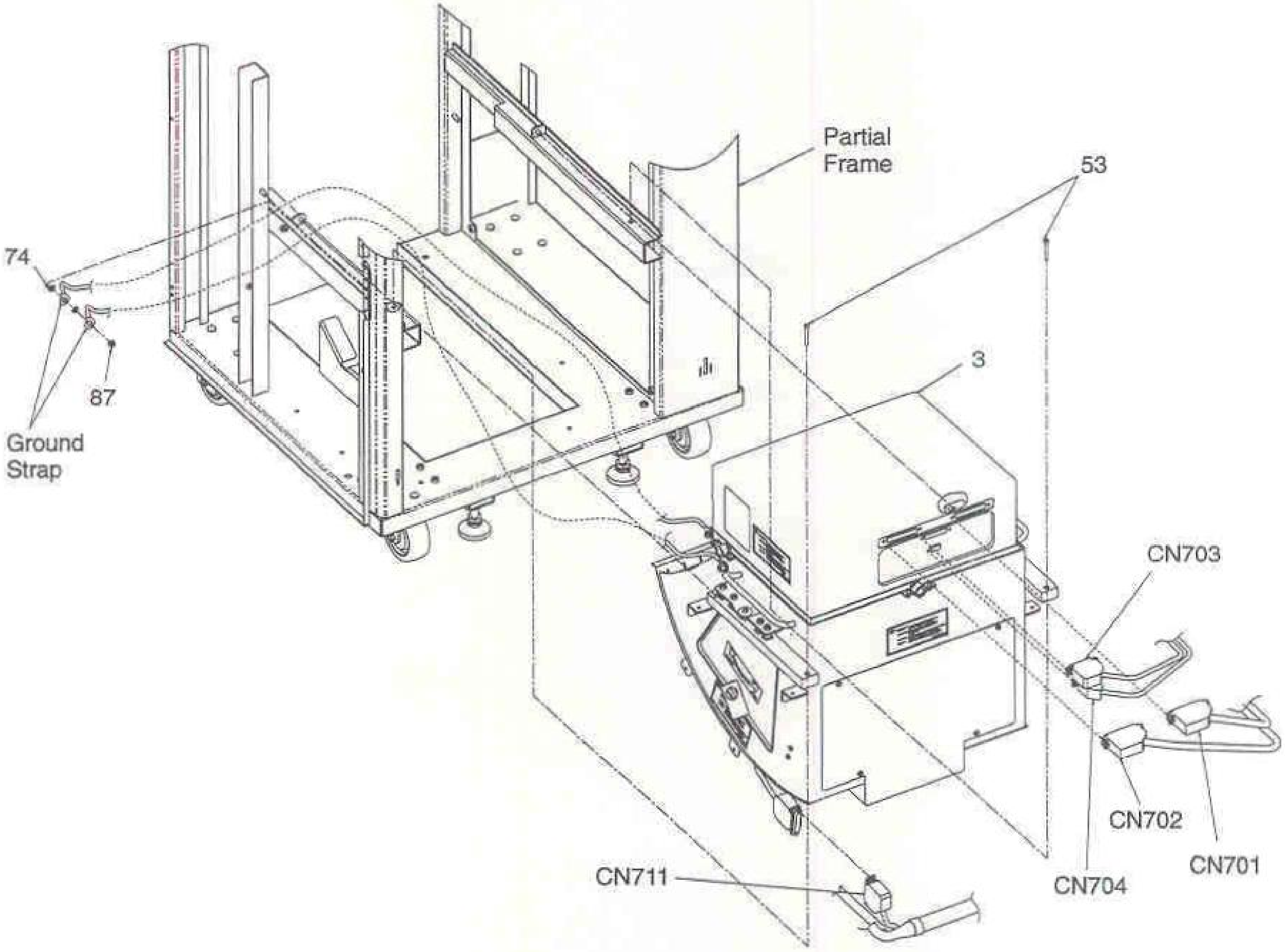

Partial
Frame
53
74
3
87
Ground
Strap
CN703
CN702
CN701
CN704
CN711

Figure 9-2. Machine Assembly
(Screen 10 of 12)

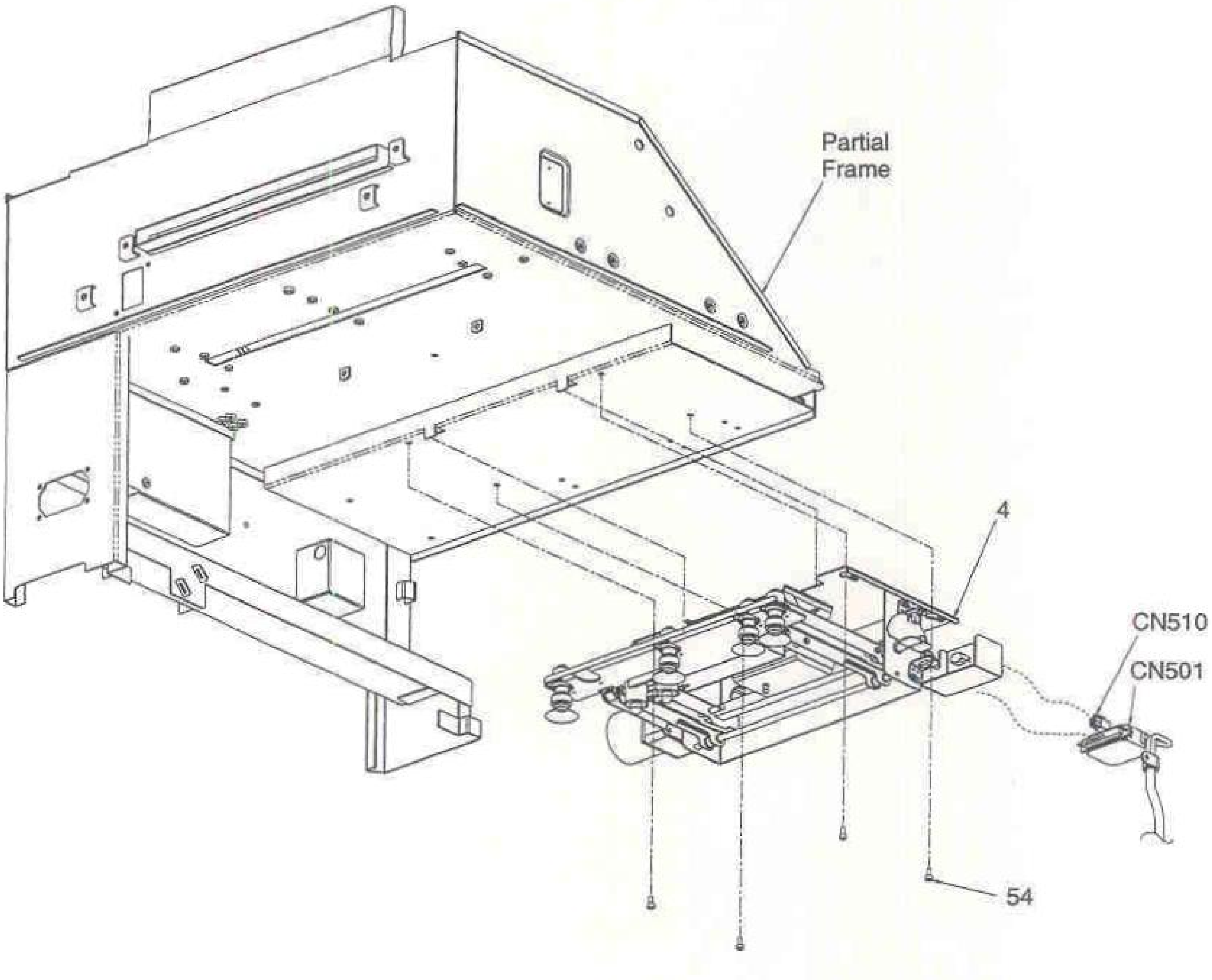

Partial
Frame
4
CN510
CN501
54

Figure 9-2. Machine Assembly
(Screen 11 of 12)

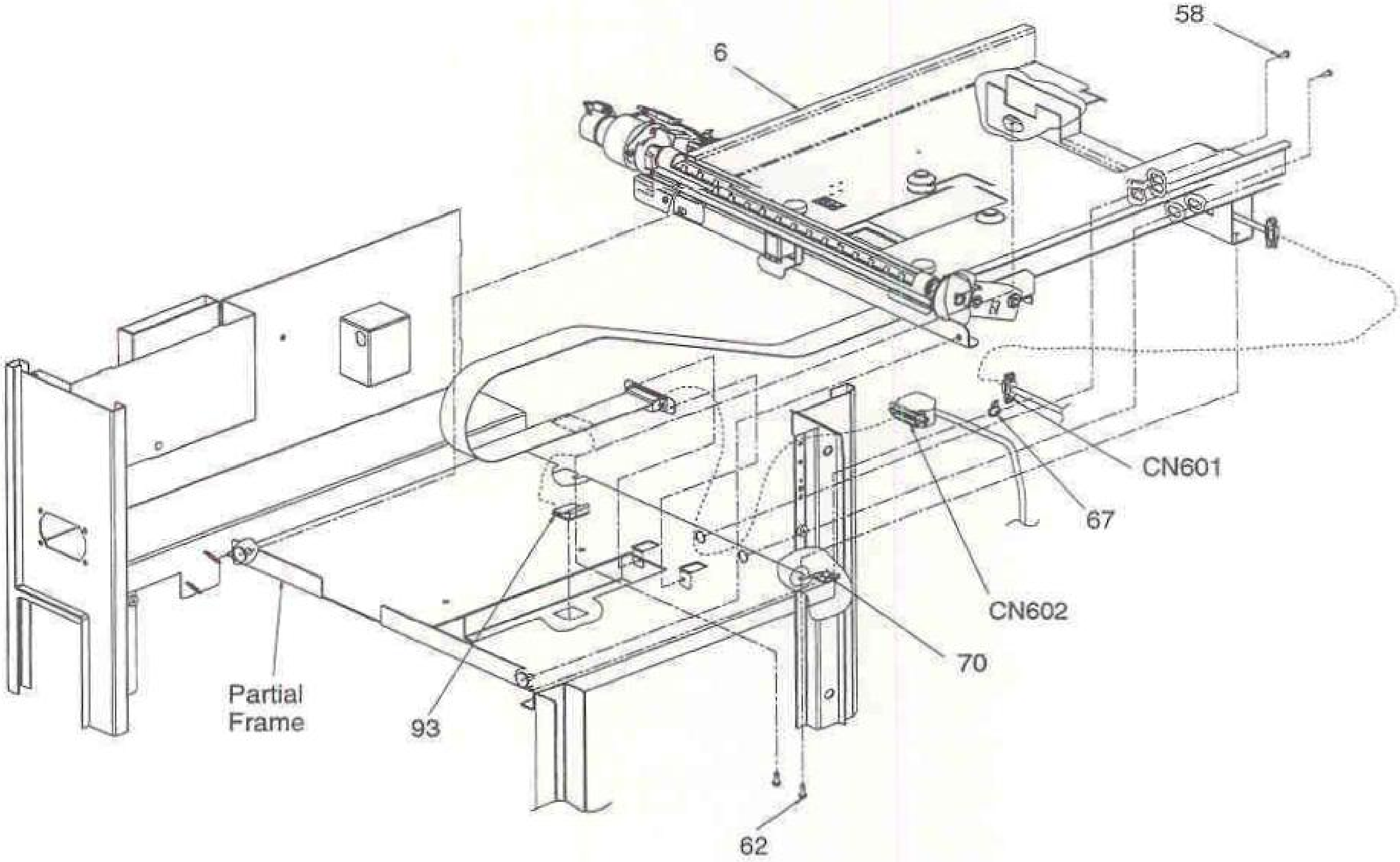

58
6
CN601
67
CN602
70
Partial
Frame
93
62

Figure 9-2. Machine Assembly
(Screen 12 of 12)

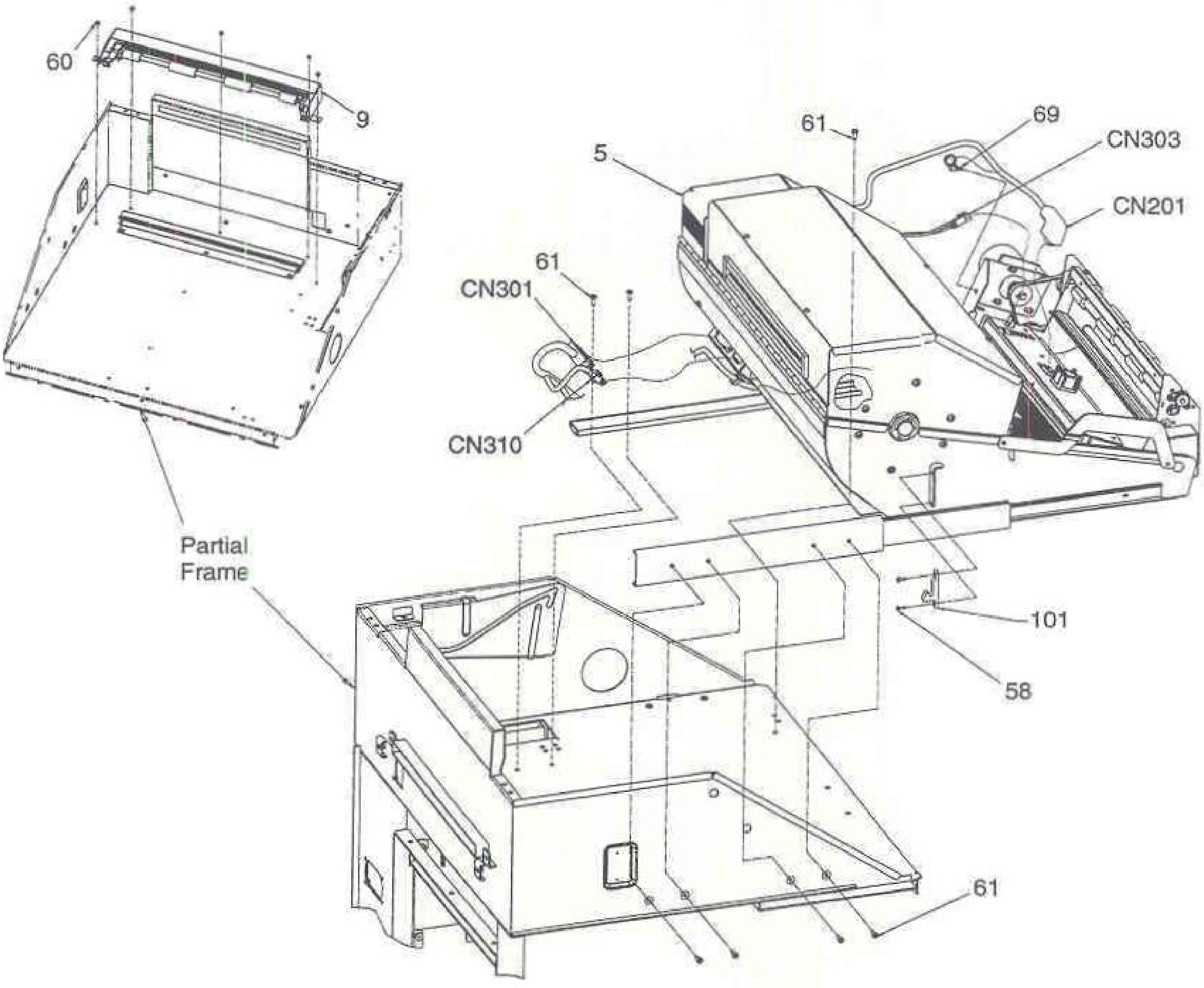

60
9
61
69
CN303
5
CN201
61
CN301
CN310
Partial
Frame
101
58
61

Figure 9-2. Machine Assembly

Item No.	Part Number	Description	Qty
0A	Not Available	MACHINE ASSEMBLY, Standalone	1
0B	Not Available	MACHINE ASSEMBLY, Dual	1
1A	Not Available	ELECTRONIC ENCLOSURE ASSEMBLY, Standalone (See Figure 9-22)	1
1B	Not Available	ELECTRONIC ENCLOSURE ASSEMBLY, Dual (See Figure 9-23)	1
2	78-8094-5874-4	FRAME ASSEMBLY	1
3	78-8094-5817-3	EXPOSURE MODULE ASSEMBLY (See Figure 9-13)	1
4	78-8094-5789-4	PICKUP MODULE ASSEMBLY (See Figure 9-10)	1
5	78-8095-9400-1	PROCESSOR ASSEMBLY (See Figure 9-16)	1
6	78-8094-5771-2	ROLLBACK ASSEMBLY (See Figure 9-7)	1
7	78-8094-5700-1	TRANSPORT MODULE ASSEMBLY (See Figure 9-12)	1
8	78-8094-5738-1	POWER MODULE ASSEMBLY (See Figure 9-21)	1
9	78-8094-5822-3	PROCESSOR ENTRANCE ASSEMBLY (See Figure 9-15)	1
10	78-8094-5165-7	HARNESS ASSEMBLY, 818 (POWER SWITCH)	1
11	78-8094-5138-4	GATE DOOR SOLENOID ASSEMBLY	1
12	78-8025-4725-3	DECAL, Field Change Record	1
13	78-8094-5290-3	PLATE, Latch	1
14	26-1009-8112-0	NUT, Mach, Hex, Metric, M6 X 1.0	2
18	78-8095-9493-6	PLATE, Bearing	1
19	78-8094-5354-7	LINK, Stop	1
20	78-8094-5361-2	PIN, Stop	1
21	78-8094-5362-0	SPACER, Link	1
23	78-8094-5365-3	BRACKET, Bearing	1
24	78-8094-5366-1	ROD, Lower	1
25	78-8094-5368-7	LOCK	2
26	78-8094-5371-1	ROD, Release	1
27	78-8094-5372-9	LINK, Solenoid	1
28	78-8094-5413-1	BRACKET, Switch, Power	1
29	78-8094-5428-9	BRACKET, Slide	2
30	78-8094-5446-1	CHUTE, Film	1
31	78-8094-5454-5	SLIDE, Modified Transport	2
32	78-8094-5543-5	SUPPORT, Bearing	2
33	78-8094-5544-3	BRACKET, Solenoid	1
34	78-8094-5545-0	BRACKET, Switch	2
35	78-8094-5547-6	COVER, Bracket	2
36	78-8094-5587-2	SPACER, Slide	1
37	78-8094-5588-0	HANGER, Slide	1
38	78-8094-5644-1	PANEL, Relay	1
39	78-8094-5645-8	BRACKET, Cable	1
40	78-8094-5740-7	SHAFT, Latch	1
41	78-8094-5754-8	RELAY, Processor, 24VDC, (K801)	1
42	78-8094-5756-3	SWITCH, Power	1

44	78-8094-5854-6	PAD, Foam	2
45	12-7996-1717-5	SPRING, Cprsn, .720 OD X .072 Wire Dia X 2.00	1
46	78-8094-5858-7	SPRING, Cable Retract	1
47	78-8094-5870-2	SHAFT, Solenoid	1
48	78-8095-9331-8	SPRING, Pivot Plate	1
49	Not Available	LABEL, Damage, Static Elect	1
51	Not Available	LABEL, Warning, Power Distribution	1
52	78-8095-9435-7	BLOCK, Stop	1
53	DY-1102-0703-1	SCREW, Cap, Hex Socket, Metric, M4 X 0.7 X 25	2
54	DY-1102-0723-9	SCREW, Cap, Hex Socket, Metric, M5 X 0.8 X 8	4
56	26-1001-0585-2	BUSHING, Nylon,	1
57	Not Available	ADHESIVE	AR
58	26-1003-7115-7	SCREW, Mach, Pan Head, Phil, Metric, M3 X 0.5 X 6.0, Sems, External Tooth	8
59	26-1003-7116-5	SCREW, Mach, Pan Head, Phil, Metric, M3 X 0.5 X 8.0, Sems, External Tooth	3
60	26-1003-7119-9	SCREW, Mach, Pan Head, Phil, M4 X 0.7 X 6.0, Sems, External Tooth	25
61	26-1003-7120-7	SCREW, Mach, Pan Head, Phil, Metric, M4 X 0.7 X 8.0, Sems, External Tooth	42
62	26-1003-7121-5	SCREW, Mach, Pan Head, Phil, Metric, M4 X 0.7 X 10.0, Sems, External Tooth	18
63	26-1003-7123-1	SCREW, Mach, Pan Head, Phil, Metric, M5 X 0.8 X 10.0, Sems External Tooth	4
64	26-1003-7487-0	SCREW, Mach, Pan Head, Phil, Metric, M4 X 0.7 X 20.0, Sems, External Tooth	8
65	26-1003-7492-0	SCREW, Mach, Pan Head, Phil, Metric, M5 X 0.8 X 8.0, Sems, External Tooth	7
66	26-1003-7124-9	SCREW, Mach, Pan Head, Phil, Metric, M5 X 0.8 X 12.0, Sems External Tooth	2
67	Not Available	TIE WRAP, Cable	11
69	Not Available	TIE WRAP, Cable	3
70	26-1007-0054-6	MOUNT, Cable Tie, Adhesive Backed	9
71	26-1007-2397-7	NUT, Mach, Hex, Metric, M4 X 0.7	6
74	26-1008-5460-8	WASHER, Metric, Lock, M6, External Tooth	4
75	78-8094-5948-6	WASHER, Transport	8
76	26-1011-6202-7	SWITCH, Interlock, 16A, 250 VAC (SW802, SW803, SW804)	3
77	Not Available	TIE WRAP	2
80	26-1011-8007-8	SCREW, Shoulder, Hex Socket, 6.0 DIA X 10 M5 X 0.8 TH	1
81	Not Available	CLAMP, Cable	4
82	26-1011-6808-1	WASHER, Metric, Lock, M5, External Tooth	1
83	Not Available	CLAMP, Cable	3
84	Not Available	CLAMP, Cable	2
86	78-8094-5962-7	SPRING, Release	1
87	26-1011-6823-0	NUT, Mach, Metric, M6 X 1.00, Keps	2
88	Not Available	CLAMP, Cable	1
89	78-8094-5865-2	DETENT ASSEMBLY	1
90	26-1011-7108-5	TAPE, Foam	AR
92	78-8005-1420-6	HOLE PLUG,	2
93	Not Available	CLAMP, Cable	1
94	78-8161-8389-7	BEARING, .2510 ID X .3125 OD X .078	3
95	78-8656-4000-3	RING, Retaining, External, E-Ring	8
96	78-8094-5879-3	LEVER, Interlock	2

97	Not Available	SHAFT, Interlock	2
98	78-8094-5616-9	POST, Spring	1
99	Not Available	RETAINER, Spring	1
100	78-8095-9531-3	PROCESSOR STOP ASSEMBLY	1
101	Not Available	LATCH, Slam	1
102	78-8094-5926-2	FD LATCH ASSEMBLY (See Figure 9-5)	1
104	Not Available	FD MANUAL ASSEMBLY	1
106	Not Available	LABEL, Zone Locations	1
108	26-1010-2067-0	SHIELD, EMI Suppressor	1
109	Not Available	SHIELD, RFI	2
111	78-8092-4043-1	BRACKET, Switch	1
112	78-8092-4068-8	BRACKET, Lever	1
113	78-8092-4044-9	LEVER, Switch	1
114	78-8092-4041-5	ROD, Prop	1
115	26-1011-7916-1	CLIP, Rod	1

Figure 9-3. Hood Assembly

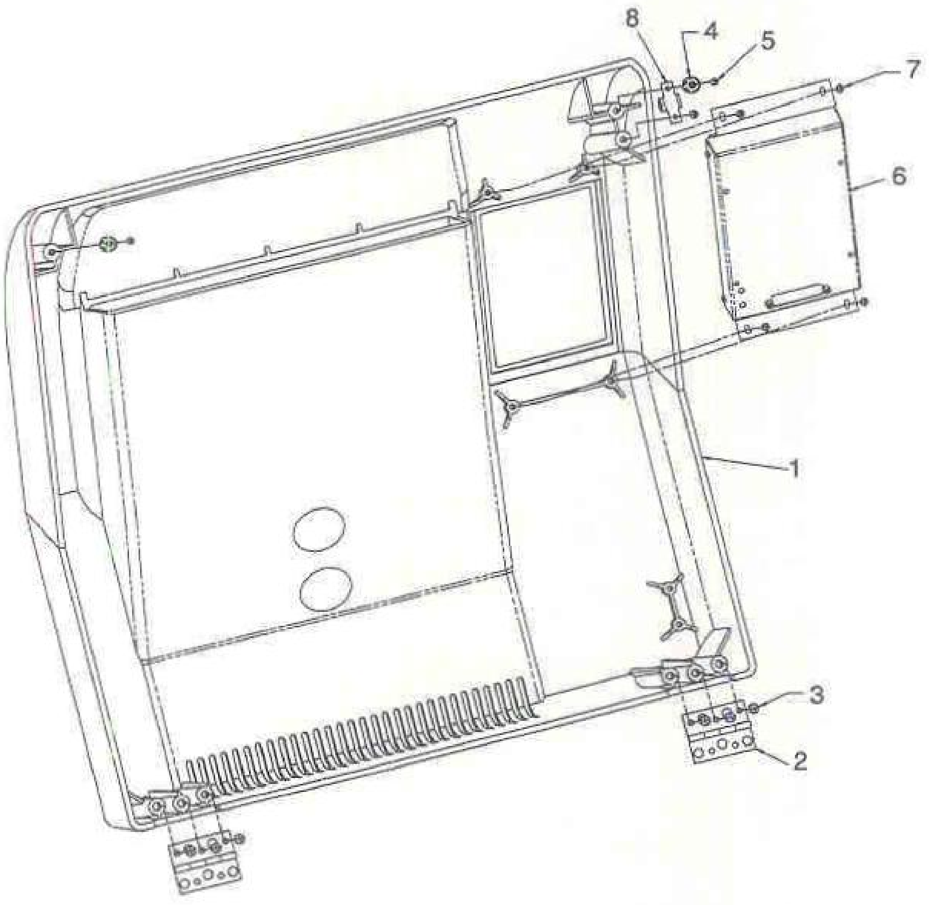
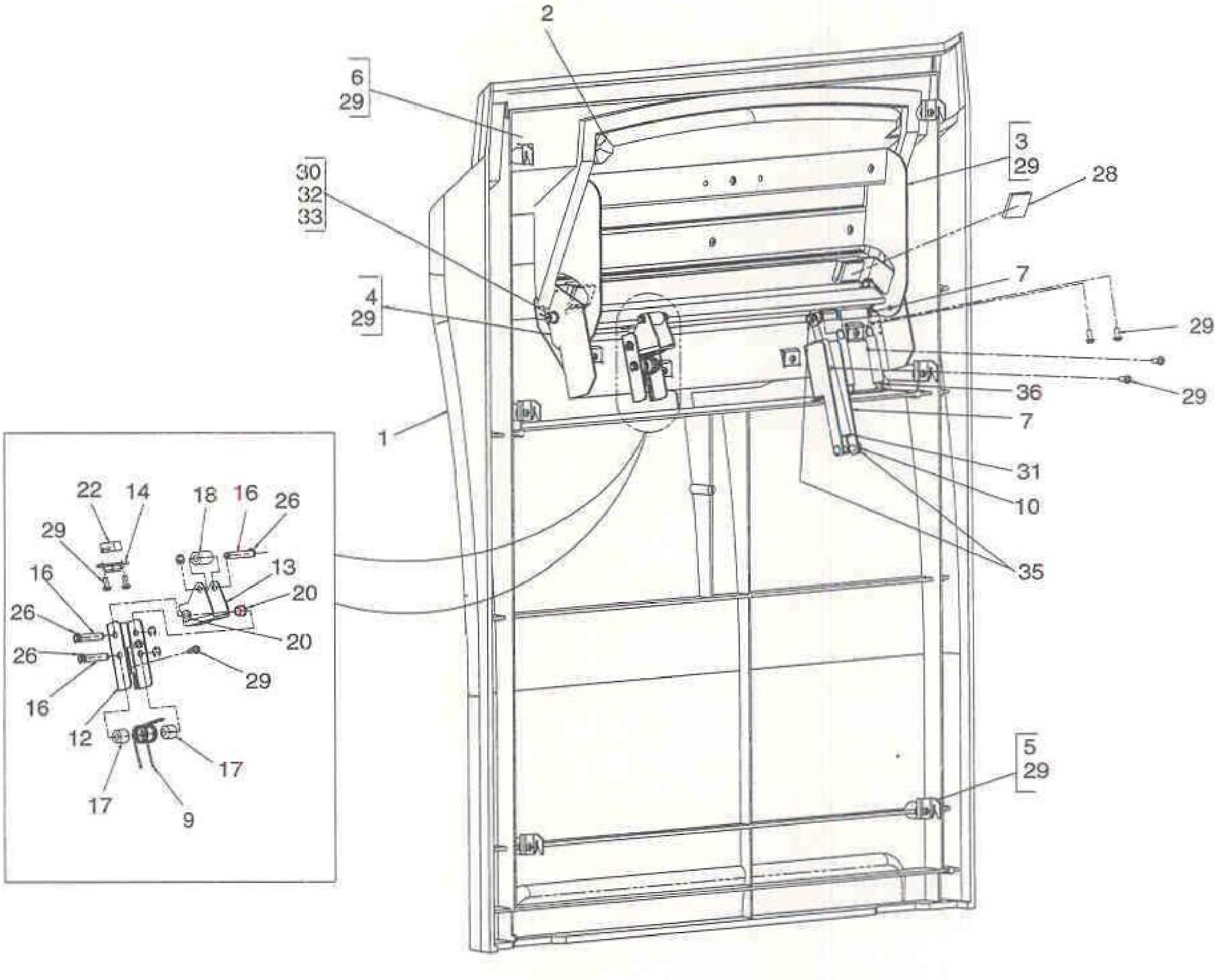


Figure 9-3. Hood Assembly

Item No.	Part Number	Description	Qty
0A	78-8094-5339-8	HOOD ASSEMBLY (3M)	1
0B	78-8094-9024-2	HOOD ASSEMBLY (GE)	1
0C	78-8094-9025-9	HOOD ASSEMBLY (OEM except GE)	1
1	Not Available	HOOD	1
2	78-8094-5334-9	HINGE	2
3	26-1003-7492-0	SCREW, Mach, Pan Head, Phil, Metric, M5 X 0.8 X 8.0, Sems, External Tooth	6
4	26-1011-6259-7	MOUNT, Rubber, Vibration,	2
5	DY-1102-0663-7	SCREW, Cap, Hex Socket, Metric, M4 X 0.7 X 10	2
6	78-8094-5452-9	LOCAL PANEL ASSEMBLY	1
7	26-1003-7120-7	SCREW, Mach, Pan Head, Phil, Metric, M4 X 0.7 X 8.0, Sems, External Tooth	5
8	78-8092-4042-3	BRACKET, Pivot	1
9	78-8095-9456-3	LABEL, Cover, Trim (3M only) (Not Shown)	1
10A	78-8094-9083-8	LABEL, Cover (GE) (Not Shown)	1
10B	78-8092-5436-6	LABEL, Cover (HITACHI) (Not Shown)	1
10C	78-8092-5435-8	LABEL, Cover (PICKER) (Not Shown)	1

Figure 9-4. Front Panel Assembly


2
6
29
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32
33
4
29
3
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28
7
29
36
29
7
31
10
35
1
5
29
22
14
18
16
26
29
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Figure 9-4. Front Panel Assembly

Item No.	Part Number	Description	Qty
0A	78-8094-5713-4	FRONT PANEL ASSEMBLY (3M and OEM except GE)	1
0B	78-8094-9031-7	FRONT PANEL ASSEMBLY (GE only)	1
1	Not Available	PANEL, Front	1
2A	78-8092-4074-6	DOOR, Cassette (3M and OEM except GE)	1
2B	78-8094-9033-3	DOOR, Cassette (GE only)	1
3	78-8094-5689-6	BRACKET, Door	1
4	78-8094-5690-4	BRACKET, Door Mounting	1
5	78-8094-5439-6	CLIP, Mounting, Right	1
6	78-8094-5440-4	CLIP, Mounting, Left	5
7	78-8092-4097-7	BRACKET, Cylinder	1
8	78-8092-4096-9	BRACKET, Rod End	1
9	78-8094-5777-9	SPRING, Torsion, Rollback	1
10	78-8094-5853-8	PIN, Clevis	1
12	78-8092-4090-2	BRACKET, Spring, DFD	1
13	78-8094-5932-0	BRACKET, Roller, DFD	1
14	78-8094-5933-8	BRACKET, Block, DFD	1
16	78-8094-5946-0	PIN	3
17	78-8094-5950-2	MANDREL, DFD	2
18	78-8094-5951-0	ROLLER, DFD	1
20	78-8094-5954-4	BEARING, DFD	2
22	78-8094-5956-9	BLOCK, DFD	1
26	12-7996-2818-0	RING, Retaining, External, E-Ring	6
28	78-8092-4006-8	PAD, FELT, FD	2
29	26-1003-7121-5	SCREW, Mach, Pan Head, Phil, Metric, M4 X 0.7 X 10.0, Sems, External Tooth	28
30	Not Available	ADHESIVE	AR
31	26-1011-6791-9	CYLINDER, Gas Spring	1
32	26-1011-6849-5	SCREW, Shoulder, .2490 X .3765 W/10-32 THD	2
33	78-8161-3130-0	BEARING, .252 ID X .377 OD X .250,	2
35	DY-1150-0028-2	RING, Retaining, External, E-Ring	2
36	26-1011-7198-6	SPRING, External, .438 OD X .046 Wire Dia X 2.50	2

Figure 9-5. FD Latch Assembly

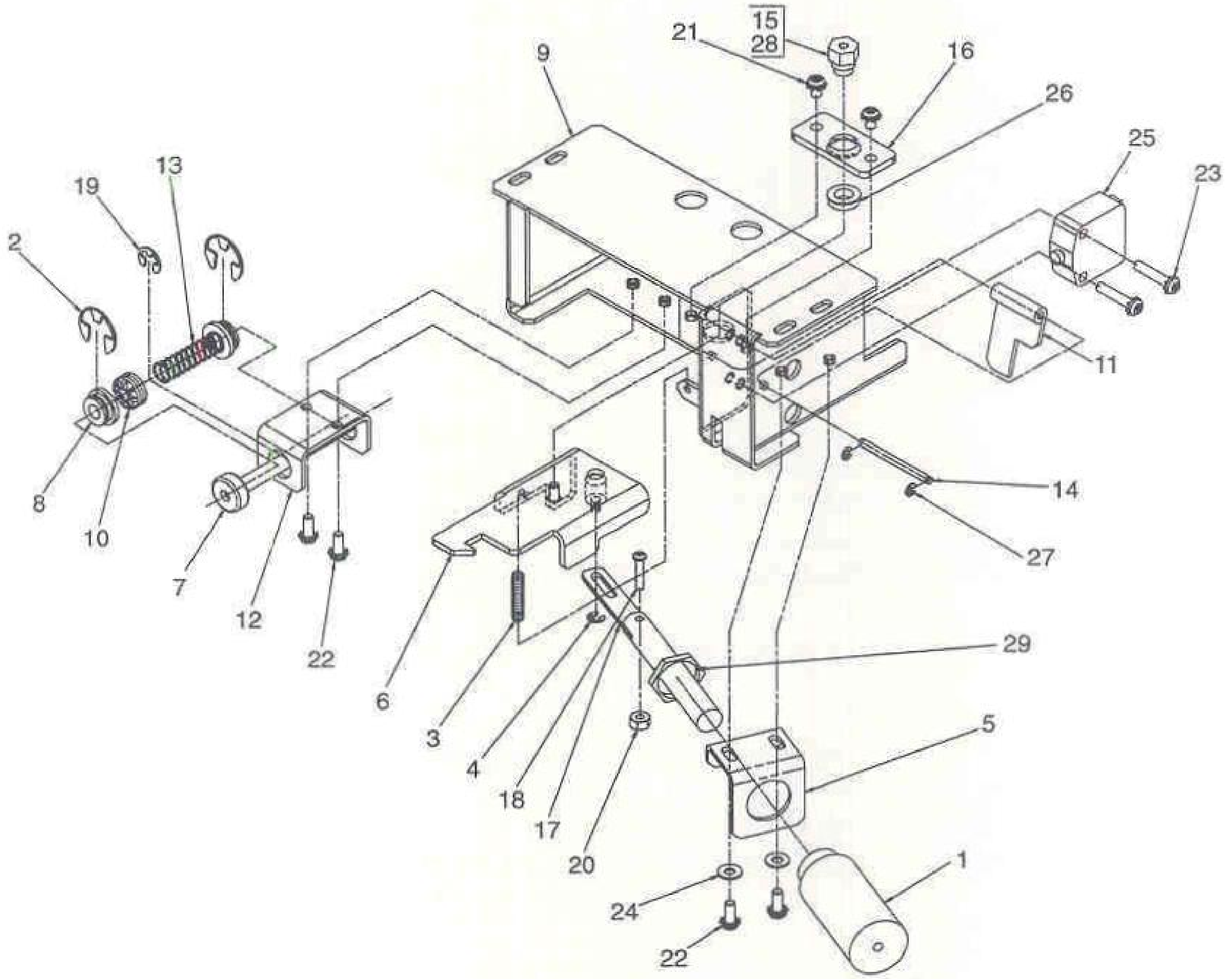
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Figure 9-5. FD Latch Assembly

Item No.	Part Number	Description	Qty
0	78-8094-5926-2	FD LATCH ASSEMBLY	
1	78-8094-5138-4	GATE DOOR SOLENOID ASSEMBLY	1
2	78-8656-4012-8	RING, Retaining, External, E-Ring	2
3	78-8032-3235-0	SPRING, External,.188 OD X .018 Wire Dia X 1.125	1
4	78-8656-4004-5	RING, Retaining, External, E-Ring	1
5	78-8094-5911-4	BRACKET, Solenoid, FD	1
6	Not Available	LATCH, FD	1
7	78-8094-5915-5	ROD, S, Pusher, FD	1
8	78-8094-5917-1	BEARING, Pusher, FD	2
9	Not Available	FRAME, FD	1
10	26-1008-9134-5	GROMMET, Ribbed, .563 OD X .219 ID with .063 groove	1
11	Not Available	LEVER, Switch, FD	1
12	Not Available	BRACKET, S, Pusher, FD	1
13	26-1005-6369-6	SPRING, Compression, .360 OD X .029 Wire Dia	1
14	78-8094-5947-8	PIN, Switch, FD	1
15	78-8094-5949-4	BLOCK, Latch, FD	1
16	Not Available	BLOCK, Bearing, FD	1
17	78-8092-4040-7	LINK	1
18	26-1003-7755-0	SCREW, Mach, Pan Head, Phil, Metric, ,M3 X 0.5 X 16, Sems, Internal Tooth	1
19	12-7996-2818-0	RING, Retaining, External	1
20	26-1005-5214-5	NUT, Mach, Hex, Metric, Lock, M3 X .05	1
21	26-1003-7119-9	SCREW, Mach, Pan Head, Phil, Metric, M4 X 0.7 X 6.0, Sems, External Tooth	2
22	26-1003-7121-5	SCREW, Mach, Pan Head, Phil, Metric, M4 X 0.7 X 10.0, Sems, External Tooth	4
23	26-1003-7487-0	SCREW, Mach, Pan Head, Phil, Metric,M4 X 0.7 X 20.0, Sems, External Tooth	2
24	26-1008-9102-2	WASHER, Metric, Plain, M4	2
25	26-1011-6202-7	SWITCH, Interlock, 16 A 250 VAC	1
26	26-1011-7793-4	BEARING, Ball, .3125 ID X .5000 OD X .1562 W	1
27	78-8656-4000-3	RING, Retaining, External E-Ring	2
28	Not Available	ADHESIVE	AR
29	Not Available	ADHESIVE	AR

Figure 9-6. Filter Housing Assembly

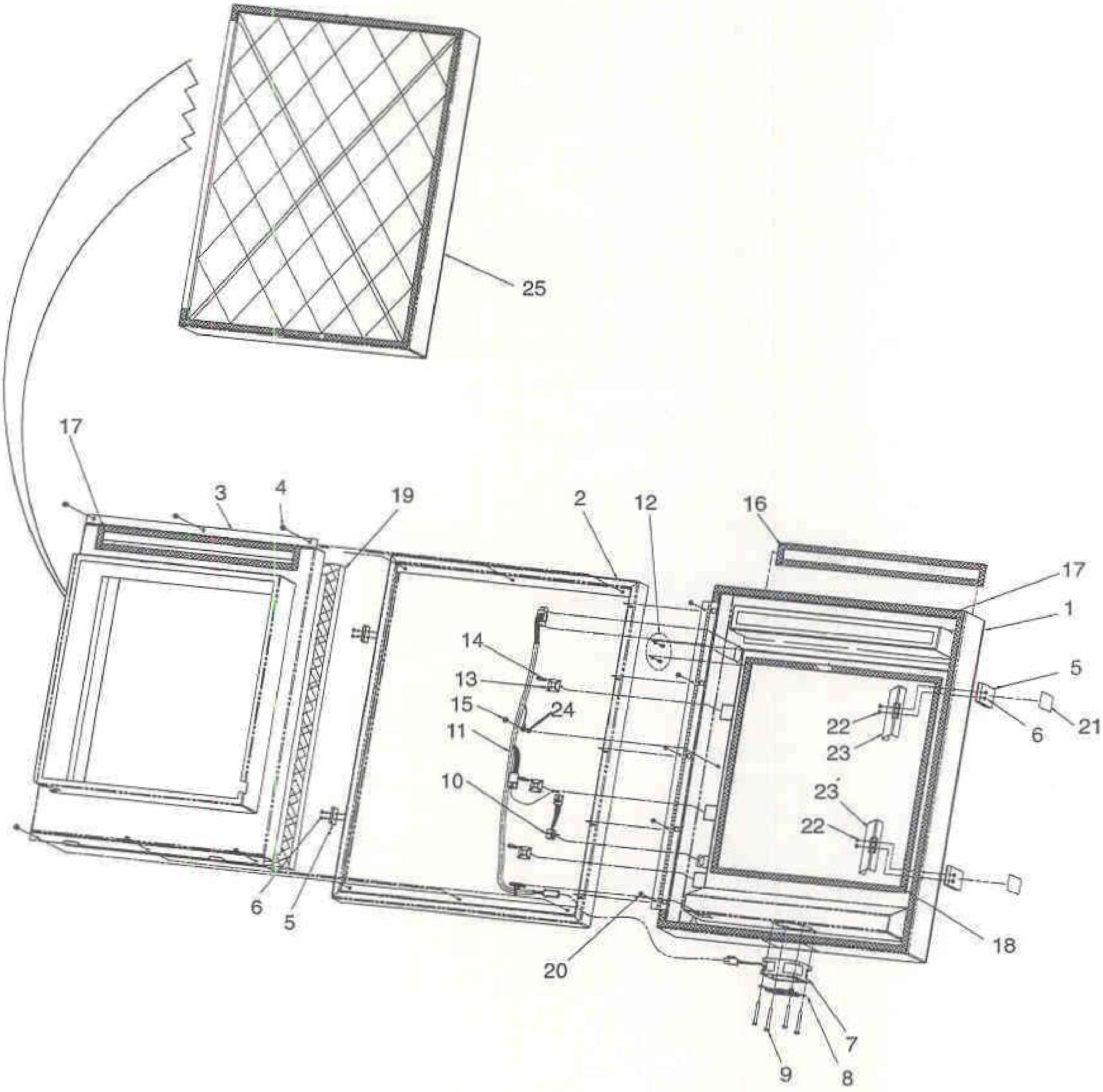
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Figure 9-6. Filter Housing Assembly

Item No.	Part Number	Description	Qty
0A	78-8094-5811-6	FILTER HOUSING ASSEMBLY (3M and OEM except GE)	1
0B	78-8094-9035-8	FILTER HOUSING ASSEMBLY (GE only)	1
1	Not Available	HOUSING, Filter	1
2A	78-8094-5895-9	DOOR, Filter (3M and OEM except GE)	1
2B	78-8094-9039-0	DOOR, Filter (GE only)	1
3	78-8094-5814-0	RETAINER, Filter	1
4	26-1003-7120-7	SCREW, Mach, Pan Head, Phil, Metric, M4 X 0.7 X 8.0,Sems, External Tooth	6
5	26-1004-0699-5	CATCH, Draw	2
6	26-1002-3843-0	SCREW, Mach, Pan Head, Phil, Metric, M3 X 0.5 X 12.0	8
7	78-8094-5816-5	FAN ASSEMBLY	1
8	26-1011-6787-7	GUARD, Finger, 2.09 X 2.09	1
9	26-1003-8206-3	SCREW, Mach, Pan Head, Phil, Metric, M4 X 0.7 X 35.0 L, Sems, External Tooth	4
10	78-8094-5130-1	850 SWITCH ASSEMBLY	1
11	78-8094-5513-8	HARNESS ASSEMBLY, 802, Filter	1
12	26-1004-3945-9	FASTENER, Jack Socket Assembly	1
13	Not Available	MOUNT, .750 X .750, Adhesive Backed	4
14	Not Available	TIE WRAP	4
15	26-1007-2397-7	NUT, Mach, Metric, M4 X 0.7,Keps	1
16	26-1011-6812-3	TAPE	AR
17	78-8094-5904-9	GASKET, Filter Housing	AR
18	78-8094-5905-6	GASKET, Filter Cartridge	AR
19	26-1011-6788-5	FILTER, Air,16 X 20 X 1, Metal, FAZ	1
20	26-1003-7778-2	SCREW, Mach, Pan Head, Phil, Metric, M3 X 0.5 X 5L, External Tooth	5
21	Not Available	DECAL, Latch	2
22	26-1008-5590-2	NUT, Mach, Metric, M3 X 0.5, Keps, External Tooth	4
23	78-8092-4036-5	SPRING, Filter	2
24	26-1011-6809-9	WASHER, Metric, Lock, M4	1
25	78-8094-9054-9	FILTER CASSETTE, Processor	1

Figure 9-7. Rollback Assembly

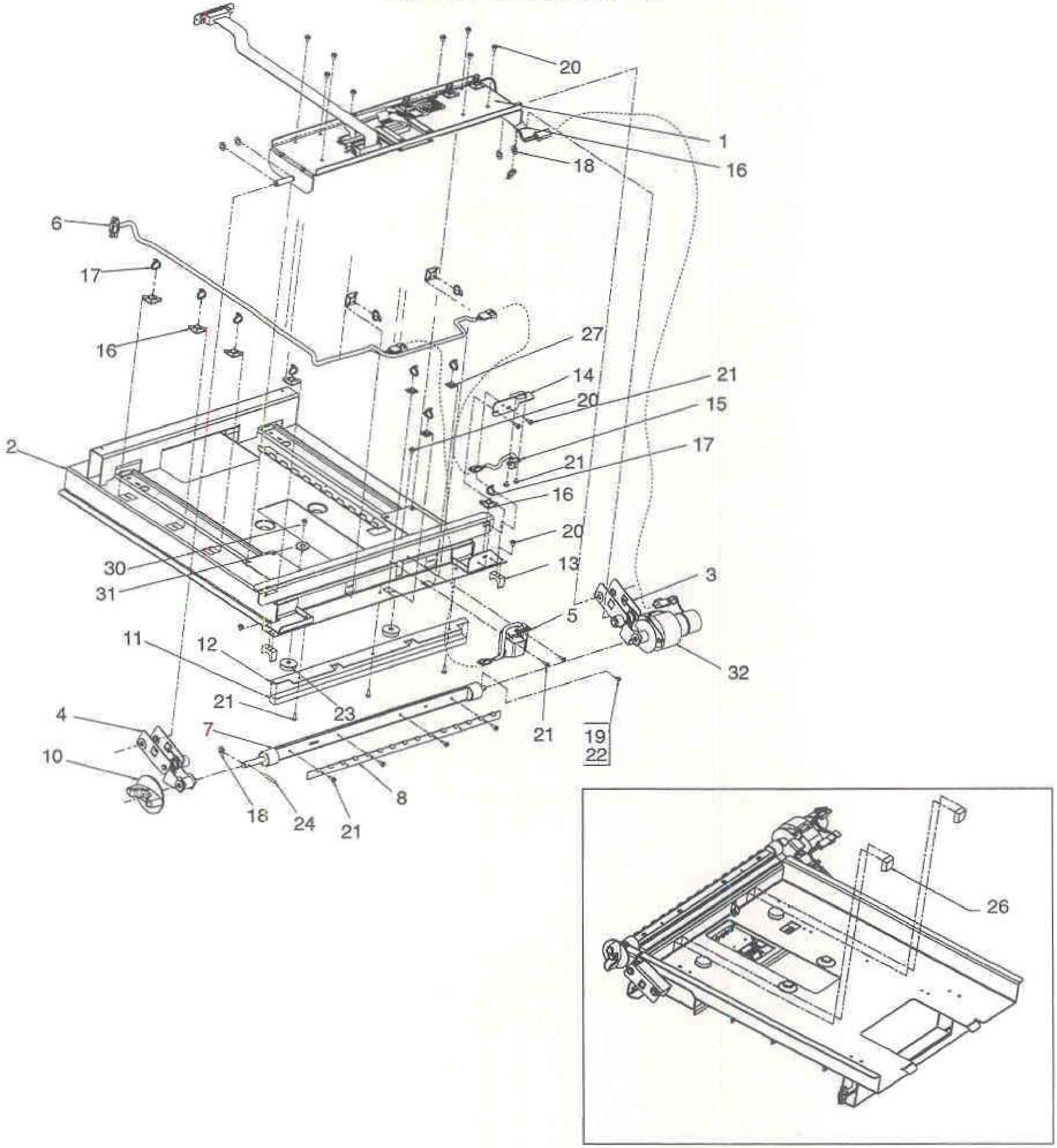
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Figure 9-7. Rollback Assembly

Item No.	Part Number	Description	Qty
0	78-8094-5771-2	ROLLBACK ASSEMBLY	
1	Not Available	ROLLBACK CARRIAGE ASSEMBLY (See Figure 9-9)	1
2	78-8094-5046-9	TRAY, Rollback	1
3	78-8094-5783-7	ROLLBACK RIGHT SPRING ASSEMBLY (includes Rollback Motor)	1
4	78-8094-5776-1	ROLLBACK LEFT SPRING ASSEMBLY	1
5	Not Available	ROLLBACK CARTRIDGE SENSOR ASSEMBLY	1
6	78-8094-5169-9	HARNESS ASSEMBLY, Rollback Switch, (601)	1
7	78-8094-5259-8	SHAFT, O/C	1
8	78-8094-5258-0	TEETH-SHAFT, Rollback	1
10	78-8094-5562-5	HANDLE, Rollback	1
11	78-8094-5017-0	PAD, Rollback	1
12	78-8094-5028-7	HOLDER, Pad, Rollback	1
13	78-8094-5391-9	NEST, Rollback	2
14	78-8094-5774-6	BRACKET, Home Sensor, Rollback	1
15	78-8094-5129-3	990 SWITCH ASSEMBLY	1
16	Not Available	MOUNT, Cable Tie	8
17	Not Available	TIE WRAP	11
18	78-8656-4005-2	RING, Retaining, External, E-Ring	5
19	26-1011-7052-5	SCREW, Cap, Hex Socket, Metric, M3 X 0.5 X 4	1
20	26-1003-7119-9	SCREW, Mach, Pan Head, Phil, Metric, M4 X 0.7 X 6.0,Sems, External Tooth	12
21	26-1003-7115-7	SCREW, Mach, Pan Head, Phil, Metric, M3 X 0.5 X 6.0,Sems, External Tooth	13
22	Not Available	ADHESIVE	AR
23	78-8094-5034-5	PIN, Locator, Rollback	2
24	12-7999-6069-0	PIN, Dowl, .125 DIA X 1.00	1
26	78-8032-3554-4	BUMPER, (Bulk)	2
27	Not Available	MOUNT, 4-WAY	3
30	26-1011-8077-1	SCREW, Cap, Hex Socket, Metric, M4 X 0.7 X 6	2
31	26-1011-6809-1	WASHER, Metric, Lock, M4, External Tooth	2
32	78-8094-5692-0	MOTOR, Rollback	1

Figure 9-8. Rollback Cartridge Sensor Assembly

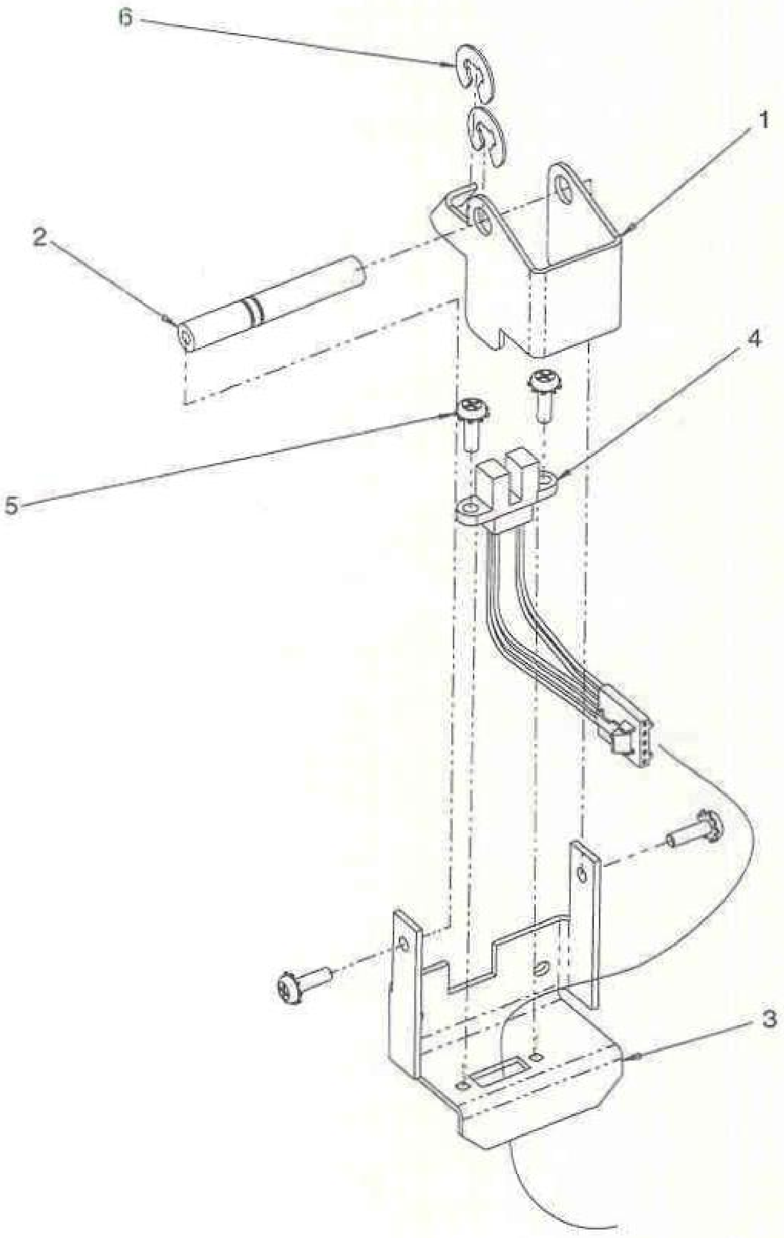

Figure 9-10. Pickup Module Assembly

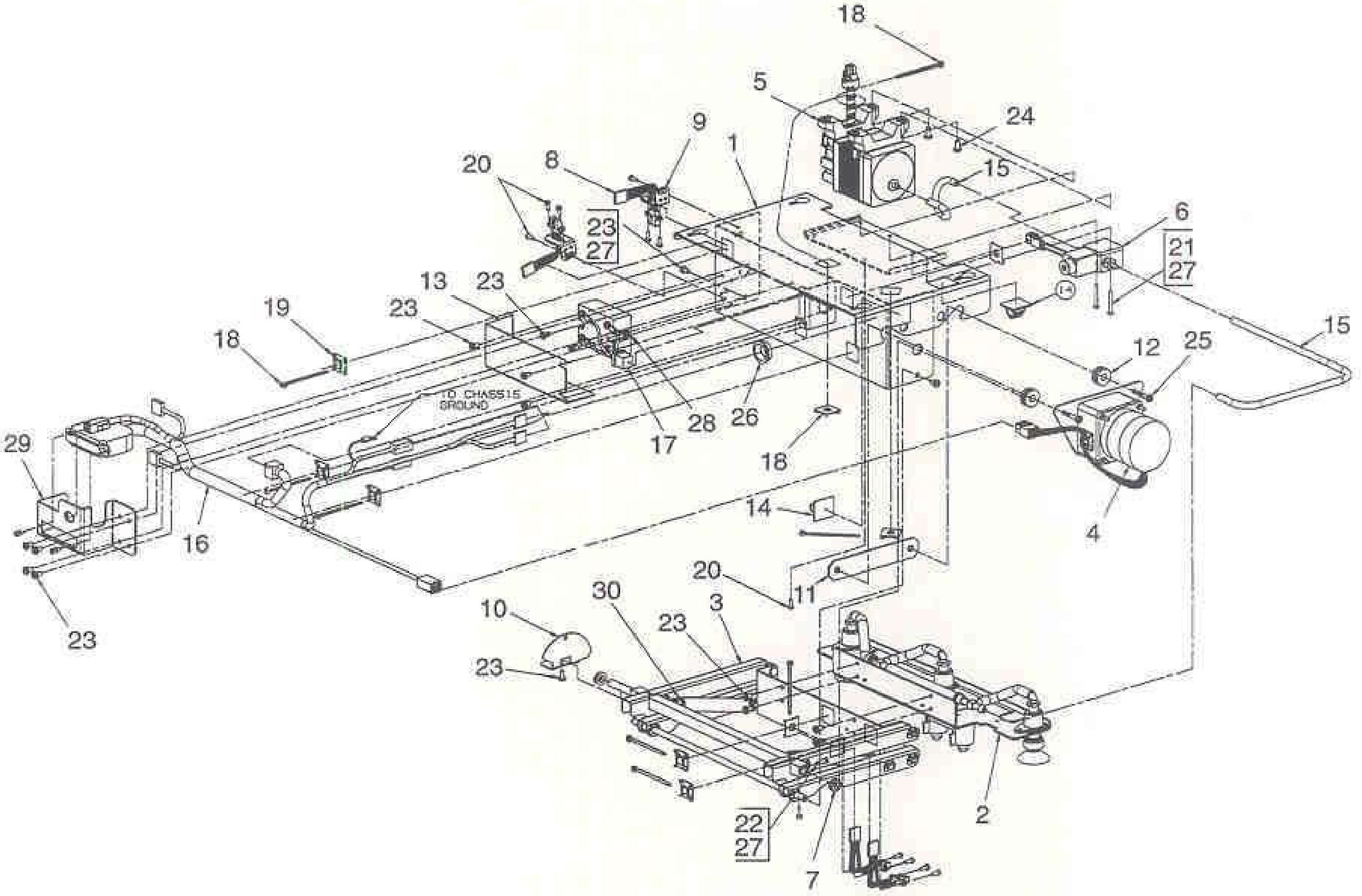
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Figure 9-10. Pickup Module Assembly

Item No.	Part Number	Description	Qty
0	78-8094-5789-4	PICKUP MODULE ASSEMBLY	1
1	Not Available	CASING, Pickup	1
2	Not Available	PLATE WRIST ASSEMBLY (See Figure 9-11)	1
3	78-8094-5744-9	VACUUM ARM ASSEMBLY	1
4	78-8094-5709-2	PICKUP MOTOR ASSEMBLY (Ratio 18:1)	1
5	78-8094-5179-8	VACUUM PUMP ASSEMBLY	1
6	78-8094-5819-9	PICKUP VALVE ASSEMBLY	1
7	26-1011-6768-7	BEARING, Ball, .3125 ID X .5000 OD X .1562 W	2
8	78-8094-5129-3	990 SWITCH ASSEMBLY	4
9	78-8094-5079-0	BRACKET, A Sensor, Pickup	2
10	78-8094-5080-8	PLATE, Sensor, Rotation, Pickup	1
11	78-8094-5477-6	NUT, Motor, Pickup	1
12	26-1011-6510-3	GROMMET, .760 OD X .285 ID with .070 Grooves	2
13	78-8094-5583-1	COVER, Relay, Pickup	1
14	Not Available	CLAMP, Nylon	2
15	26-1011-6729-9	TUBING, .125 ID X .250 OD	AR
16	78-8094-5168-1	HARNESS ASSEMBLY, Pickup (500)	1
17	78-8094-5483-4	HARNESS ASSEMBLY, Pickup Vacuum (501)	1
18	Not Available	TIE WRAP	8
19	Not Available	MOUNT, Cable Tie	6
20	26-1003-7115-7	SCREW, Mach, Pan Head, Phil, Metric, M3 X 0.5 X 6.0, Sems, External Tooth	11
21	26-1002-3982-6	SCREW, Mach, Pan Head, Phil, Metric, M3 X 0.5 X 25.0, Sems, External Tooth	2
22	DY-1102-0663-7	SCREW, Cap, Hex Socket, Metric, M4 X 0.7 X 10	2
23	26-1003-7120-7	SCREW, Mach, Pan Head, Phil, Metric, M4 X 0.7 X 8.0, Sems, External Tooth	16
24	26-1003-7121-5	SCREW, Mach, Pan Head, Phil, Metric, M4 X 0.7 X 10.0,Sems, External Tooth	4
25	26-1003-7487-0	SCREW, Mach, Pan Head, Phil, Metric, M4 X 0.7 X 20.0, Sems, External Tooth	2
26	77-8007-4484-7	BUSHING, Snap, Nylon	1
27	Not Available	ADHESIVE	AR
28	78-8094-5749-8	RELAY, Vacuum, Pickup	1
29	78-8094-5929-6	BRACKET, Connector Support	1
30	78-8094-5742-3	SPRING, Extension, Pickup	2

Figure 9-11. Plate Wrist Assembly

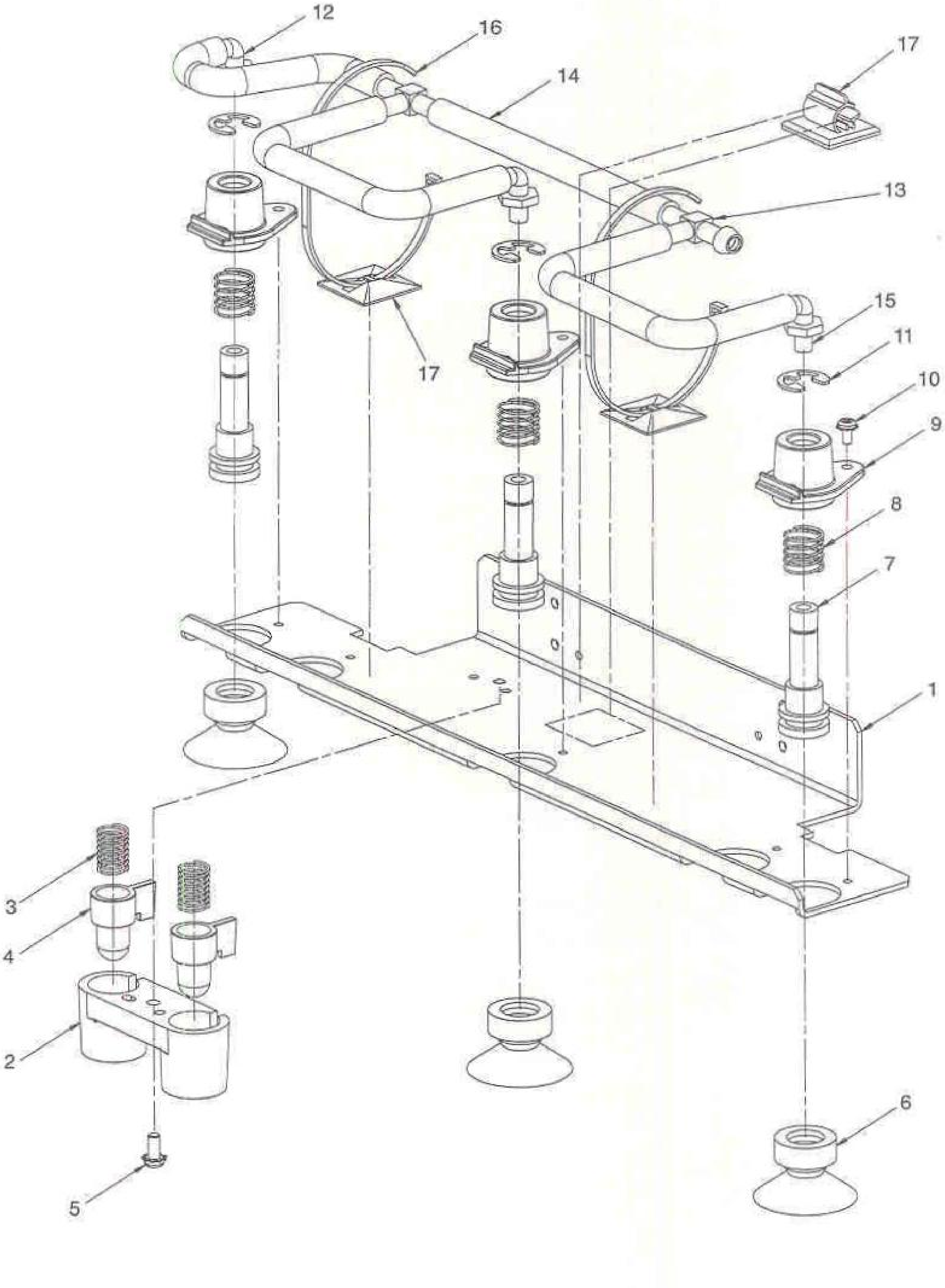
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Figure 9-21. Power Module Assembly

Item No.	Part Number	Description	Qty
0A	78-8094-5738-1	POWER MODULE ASSEMBLY (U.S)	1
0B	78-8095-9549-5	POWER MODULE ASSEMBLY (O.U.S.)	1
1	26-1011-6642-4	SCREW, Mach, Hex Head, Metric, M6 X 1.0 X 80	4
2	26-1011-6324-9	WASHER, Plain, 1/4 .500 OD X .031 T, FIBER	4
3	78-8092-4153-8	TRANSFORMER ASSEMBLY (T901)	1
4	Not Available	ENCLOSURE BASE ASSEMBLY	1
5	26-1011-6251-4	FILTER, 10 A 120/150 V 50/60 HZ (LF901)	1
6	26-1011-6645-7	SCREW, Cap, Hex Socket, Metric, M3 X 0.5 X 8.0	2
7	26-1011-6222-5	CIRCUIT BREAKER, 3 A 50 VDC-250 VAC (CB904)	1
8	26-1011-6221-7	CIRCUIT BREAKER, 8 A 50 VDC-250 VAC, (CB903)	1
9	26-1004-3199-3	CIRCUIT BREAKER, 15A @ 32 VDC/250 VAC, (CB902)	1
10	Not Available	TAG, Caution (120-220V, 15/20A)	1
11	78-8095-9392-0	PANEL, Air, Power Module	1
12	26-1008-9104-8	WASHER, Metric, Plain, M3	19
13A	26-1003-7115-7	SCREW, Mach, Pan Head, Phil, Metric, M3 X 0.5 X 6.0, Sems, External Tooth	11
13B	26-1004-1109-4	SCREW, Mach, Pan head, Phil, Metric, 6-32 X .250, Sems, Internal Tooth	ALT
14	Not Available	LABEL, Warning, Disconnect Power	2
15	26-1011-6640-8	SCREW, Cap, Hex Socket, Metric, M4 X 0.7 X 45	4
17	26-1003-7122-3	SCREW, Mach, Pan Head, Phil, Metric, M4 X 0.7 X 12.0	1
18	26-1008-9102-2	WASHER, Metric, Plain, M4,	16
19	78-8095-9494-4	HOUSING, Filter, Power Module	1
20	78-8094-5763-9	FAN ASSEMBLY (M901)	1
21	26-1011-7794-2	HANDLE	1
22	78-8094-5718-3	POWER SUPPLY (PS1) (+5, +/-17, +24)	1
23	Not Available	BRACKET, Utility, Power Module	1
24	26-1002-3841-4	SCREW, Mach, Pan Head, Phil, Metric, M3 X 0.5 X 8.0	4
25	26-1003-7119-9	SCREW, Mach, Pan Head, Phil, M4 X 0.7 X 6.0, Sems, External Tooth	6
26	26-1002-6586-2	GROMMET, Nylon	AR
27	78-8094-5162-4	HARNESS ASSEMBLY, DC Power (901)	1
28	Not Available	TIE WRAP	1
29	78-8094-5173-1	HARNESS ASSEMBLY, AC Power (900)	1
30	26-1003-6937-5	SCREW, Mach, Pan Head, Phil, M3 X 0.5 X 16, Sems, External Tooth	4
31	26-1003-7120-7	SCREW, Mach, Pan Head, Phil, M4 X 0.7 X 8.0, Sems, External Tooth	7
32	26-1011-6644-0	NUT, Mach, Hex, Metric, M6 X 1.0,Keps	4
33	78-8094-5755-5	RELAY, 24 VAC (K901) (Power Switch)	1
34	26-1011-6639-0	SCREW, Mach, Pan Head, Phil, 10-32 X .38, Sems, External Tooth	2
35	26-1011-6643-2	NUT, Mach, Hex, Metric, M5 X 0.8, Keps	3
36	Not Available	LABEL, Earth Ground	1
37	78-8094-5757-1	VARISTOR ASSEMBLY (V901)	1
38	26-1007-4915-4	CAPACITOR, 45 UF 240 VAC (C901)	1
39	Not Available	TIE WRAP	2

40	78-8094-5500-5	POWER SUPPLY, -5.2VDC (PS2) (For VIB machines only)	1
41	Not Available	LABEL, Wiring Diagram	1
42A	26-1011-6229-0	CIRCUIT BREAKER, 10 A 277 VAC (CB901) (with M3 X 0.5 mounting threads)	1
42B	26-1011-8003-7	CIRCUIT BREAKER, 10 A 277 VAC (CB901) (with 6-32 mounting threads)	ALT
43	Not Available	BRACKET, Air, Power Module	1
44	26-1007-3192-1	TERMINAL BLOCK (TS901)	1
45	26-1008-9213-7	WASHER, Metric, Plain, M5	2
46	Not Available	LABEL, Voltage Taps	1
48	Not Available	COVER, Power Module	1
49	78-8094-5515-3	PWA, Fan Control Board	1
50	26-1006-9839-3	BUSHING, Strain Relief, Nylon	1
51	26-1011-5429-7	WASHER, Insulator, .006 THK	1
53	78-8095-9432-4	COVER, Power Supply Mounting	1
54	26-1001-8018-6	WASHER, Metric, Lock, 3.2 ID X 6.0 OD X 0.2 Thk, External Tooth	4
55	Not Available	ADHESIVE	AR
56	78-8094-5512-0	CABLE ASSEMBLY, Power Ground (902)	1
57	26-1008-5460-8	WASHER, Metric, Lock, M6.0, External Tooth	3
65	26-1004-0917-1	CLAMP	2
67	78-8095-9496-9	INSULATOR, PWB, Fan Control	1
68	26-1003-7116-5	SCREW, Mach, Pan Head, Phil, Metric, M3 X 0.5 X 8.0, Sems, External Tooth	4
69	78-8095-9495-1	FILTER, Air, Power Module	1
70	78-8095-9492-8	COVER, Filter, Power Module	1
71	78-8092-5401-0	LABEL, Access Hole Cover	1

Figure 9-22. Electronics Enclosure Assembly, Standalone
(Screen 1 of 2)

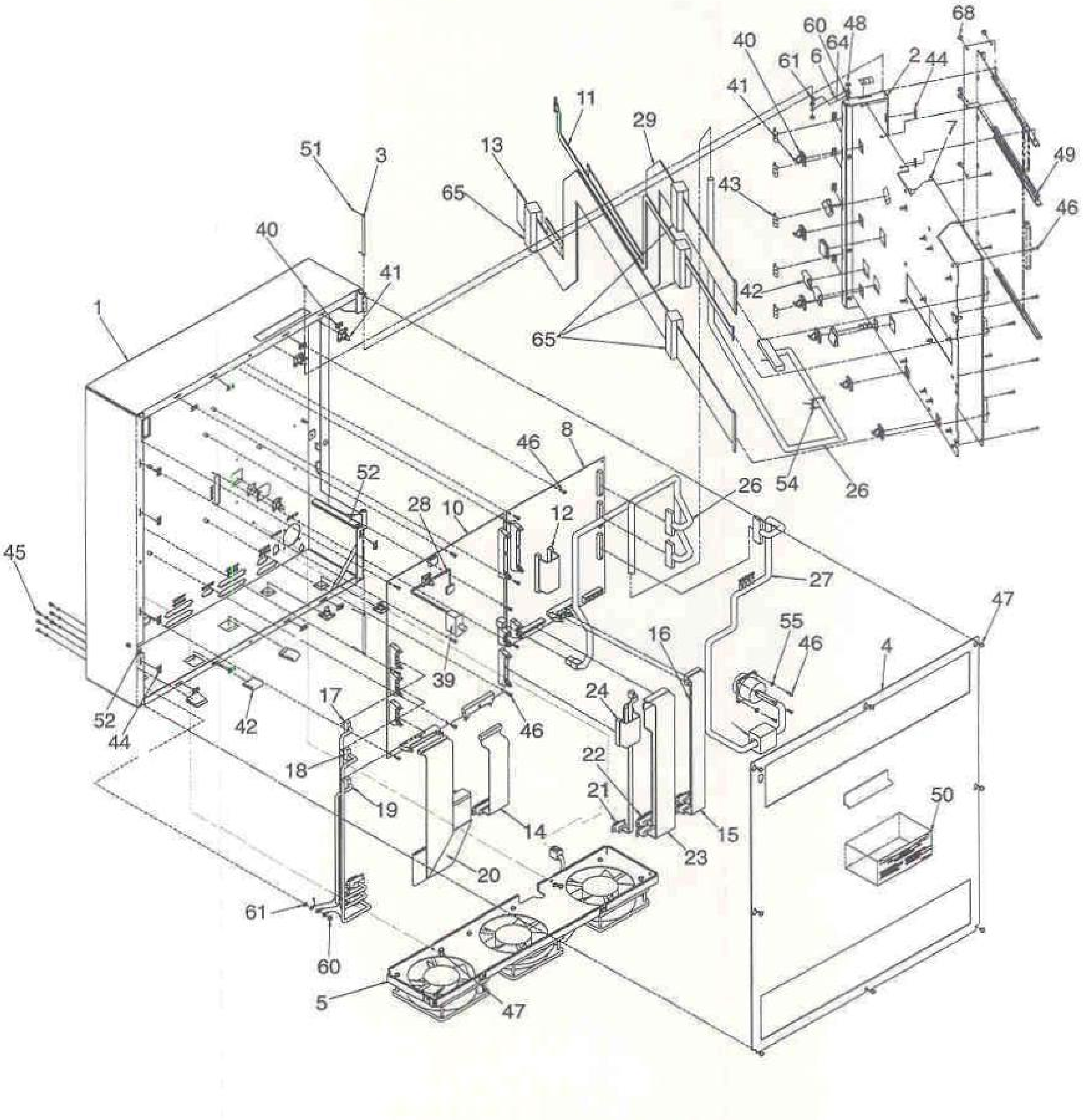
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Figure 9-22. Electronics Enclosure Assembly, Standalone
(Screen 2 of 2)

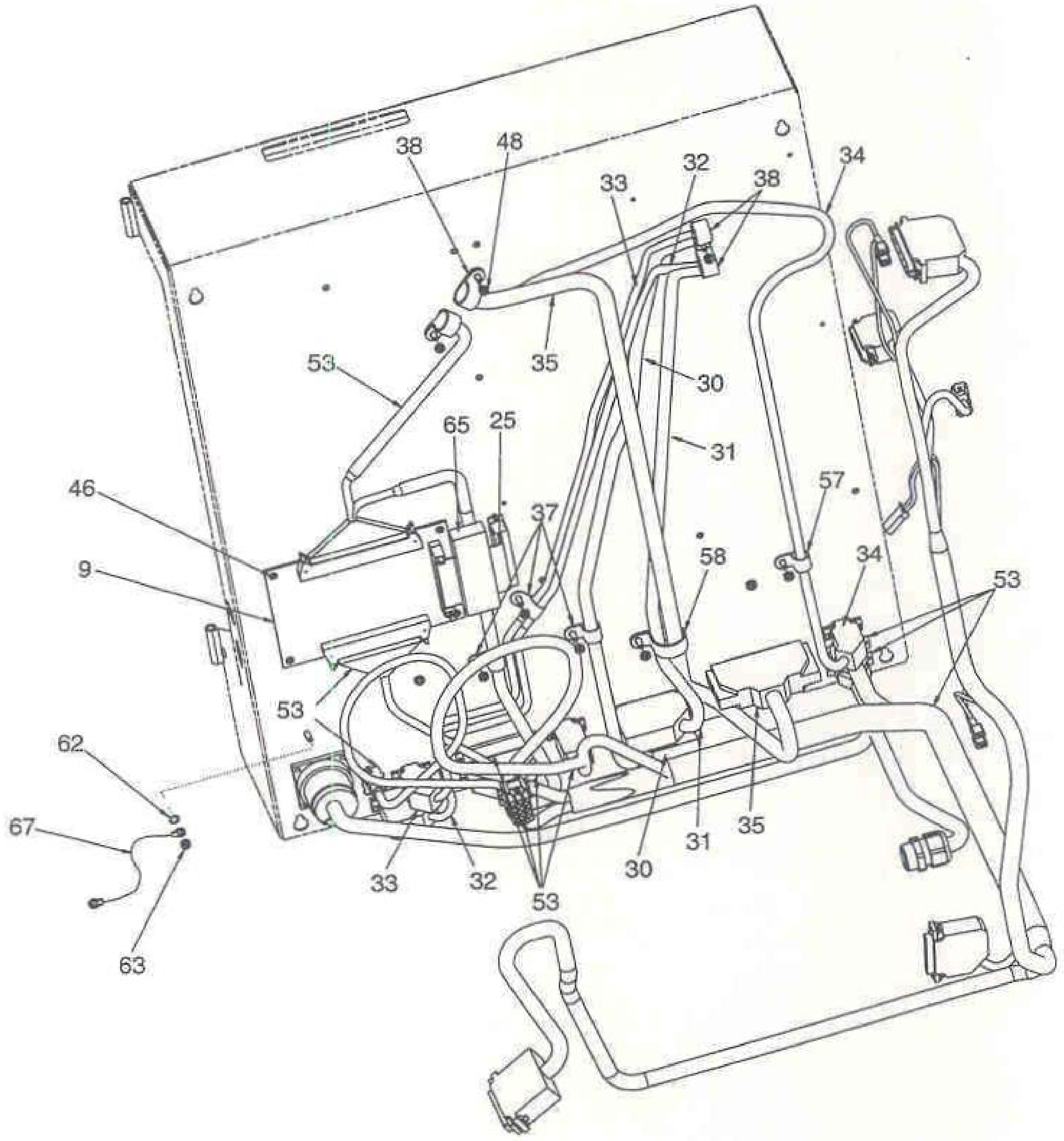
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Figure 9-22. Electronics Enclosure Assembly, Standalone

Item No.	Part Number	Description	Qty
0	Not Available	ELECTRONIC ENCLOSURE ASSEMBLY, Standalone	
1	Not Available	ENCLOSURE, Main	1
2	Not Available	PANEL, Inside	1
3	78-8094-5267-1	PIN, Hinge	2
4	78-8094-5268-9	PANEL, Cover	1
5	Not Available	ELECTRONICS FAN ASSEMBLY (See Figure 9-24)	1
6	78-8094-5847-0	CABLE RESTRAINT	1
7	78-8092-4140-5	IMAGE PROCESSOR BOARD, (IPB)	1
8	78-8092-4145-4	MACHINE INTERFACE BOARD, (MIB)	1
9	78-8094-5116-0	POWER DISTRIBUTION BOARD, (PDB)	1
10	78-8092-4146-2	SYSTEM CONTROLLER BOARD, (SCB)	1
11	78-8094-5140-0	CABLE ASSEMBLY, IPB/SCB	1
12	78-8094-5141-8	CABLE ASSEMBLY, MIB/SCB	1
13	78-8094-5142-6	CABLE ASSEMBLY, Internal Optics Data	1
14	78-8094-5144-2	CABLE ASSEMBLY, Internal Optics Control	1
15	78-8094-5146-7	CABLE ASSEMBLY, Internal Optics Power	1
16	78-8094-5148-3	CABLE ASSEMBLY, Internal Optics Atten.	1
17	78-8094-5150-9	CABLE ASSEMBLY, BP/MF	1
18	78-8094-5151-7	CABLE ASSEMBLY, Barcode	1
19	78-8094-5152-5	CABLE ASSEMBLY, Internal Densitometer	1
20	78-8094-5154-1	CABLE ASSEMBLY, Internal Local Panel	1
21	78-8094-5156-6	CABLE ASSEMBLY, 24 VAC	1
22	78-8094-5157-4	CABLE ASSEMBLY, Solenoids	1
23	78-8094-5158-2	CABLE ASSEMBLY, Motors	1
24	78-8094-5159-0	CABLE ASSEMBLY, Internal PDB/SCB	1
25	78-8094-5160-8	CABLE ASSEMBLY, External PDB/SCB	1
26	Not Available	HARNESS ASSEMBLY, IPB/SCB DC Power	1
27	Not Available	HARNESS ASSEMBLY, MIB DC Power	1
28	78-8094-5164-0	HARNESS ASSEMBLY, Service Switch	1
29	78-8094-5484-2	CABLE ASSEMBLY, IPB/NMB	1
30	78-8094-5143-4	CABLE, MOLDED, External Optics Data, I/O Interconnect	1
31	78-8094-5145-9	CABLE, MOLDED, External Optics Control, I/O Interconnect	1
32	78-8094-5147-5	CABLE, MOLDED, External Optics Power, I/O Interconnect	1
33	78-8094-5149-1	CABLE, MOLDED, External Optics Atten, I/O Interconnect	1
34	78-8094-5153-3	CABLE, MOLDED, External Densitometer, I/O Interconnect	1
35	78-8094-5155-8	CABLE, MOLDED, External Local Panel, I/O Interconnect	1
37	Not Available	CLAMP, Nylon, 1/2"	2
38	Not Available	CLAMP, Nylon	4
39	26-1011-6847-9	SWITCH, Push-pull (RESET), 0.1 A 125 VAC	1
40	Not Available	TIE MOUNT, Adhesive Backed	12
41	Not Available	TIE WRAP	12

42	Not Available	CLAMP	9
43	Not Available	SHIELD	7
44	Not Available	SHIELDING, Electrical	23
45	26-1004-3945-9	FASTENER, 4-40 THD X .5	12
46	26-1002-3977-6	SCREW, Mach, Pan Head, Phil, Metric, M3 X 0.5 X 8.0	32
47	26-1003-7120-7	SCREW, Mach, Pan Head, Phil, Metric, M4 X 0.7 X 8.0, Sems, External Tooth	12
48	26-1009-7311-9	NUT, Lock, Metric, M4. (with nylon insert)	9
49	Not Available	GUIDE	4
50	Not Available	LABEL, Damage, Static Electricity	
51	78-8016-5859-8	RING, Retaining, External, E-Ring	4
52	26-1011-4695-4	TAPE, Foam, .125 T X .500 W (Bulk)	AR
53	Not Available	HARNESS ASSEMBLY, Module Interconnect	1
54	Not Available	CLAMP, Nylon	1
55	26-1008-9104-8	WASHER, Metric, Plain, M3	4
57	Not Available	CLAMP, Cable, Nylon, 3/8"	1
58	Not Available	CLAMP, Nylon	1
60	26-1007-2397-7	NUT, Mach, Metric, M4 X 0.7, Keps	3
61	26-1011-6809-9	WASHER, Metric, Lock, M4, External Tooth	3
62	26-1011-6808-1	WASHER, Metric, Lock, M5, External Tooth	1
63	26-1011-6643-2	NUT, Metric, Mach, M5 X 0.8, Keps	1
64	78-8092-4164-5	CABLE ASSEMBLY, Panel Ground	1
65	Not Available	SHIELD, Flat Cable Clamp	5
66	26-1011-6671-3	SHIELD, Ferrite	1
67	78-8094-5485-9	CABLE ASSEMBLY, Platen Ground	1
68	26-1003-7121-5	SCREW, M4 X 10	9
69A	78-8092-4054-8	FIBER INTERFACE BOARD, (FIB), (includes faceplate) (See Note 1)	AR
69B	78-8092-4055-5	VIDEO INTERFACE BOARD, (VIB), (includes faceplate) (See Note 1)	AR
69C	78-8092-4053-0	DIGITAL INTERFACE BOARD, (DIB), (includes faceplate) (See Note 1)	AR
70	78-8092-4081-1	TRANSLATOR DAUGHTER BOARD, Copper, (TDB/C), (includes faceplate) (See Note 1)	AR
69B	78-8092-4083-7	TRANSLATOR DAUGHTER BOARD, Fiber, (TDB/F), (includes faceplate) (See Note 1)	AR
70A	78-8092-4115-7	MEMORY DAUGHTER BOARD, (MDB), 16 MEG, 8-Bit (See Note 1)	AR
70B	78-8092-4116-5	MEMORY DAUGHTER BOARD, (MDB), 32 MEG, 8-Bit (See Note 1)	AR
70C	78-8092-4117-3	MEMORY DAUGHTER BOARD, (MDB), 32 MEG, 12-Bit (See Note 1)	AR
71A	78-8094-5482-5	MODEM BOARD, US (See Note 1)	AR
71B	78-8092-4154-6	MODEM CONNECT BOARD, OUS (See Note 1)	AR
72	78-8092-5434-1	SUPPORT, Ferrite, Video Interface Board (See Note 1)	AR

Note 1. Not shown.

Figure 9-23. Electronics Enclosure Assembly, Dual (Screen 1 of 2)

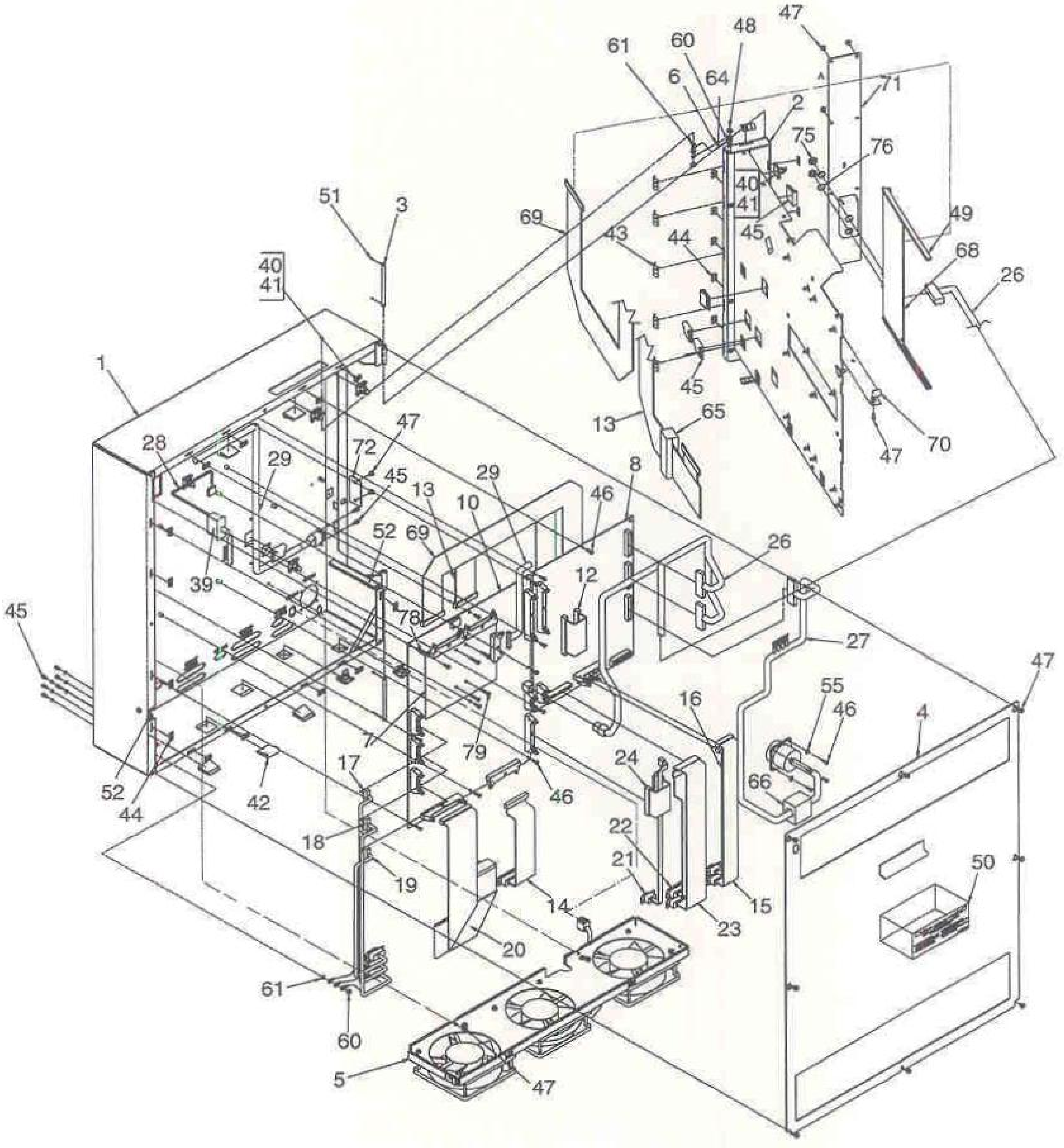
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Figure 9-23. Electronics Enclosure Assembly, Dual (Screen 2 of 2)

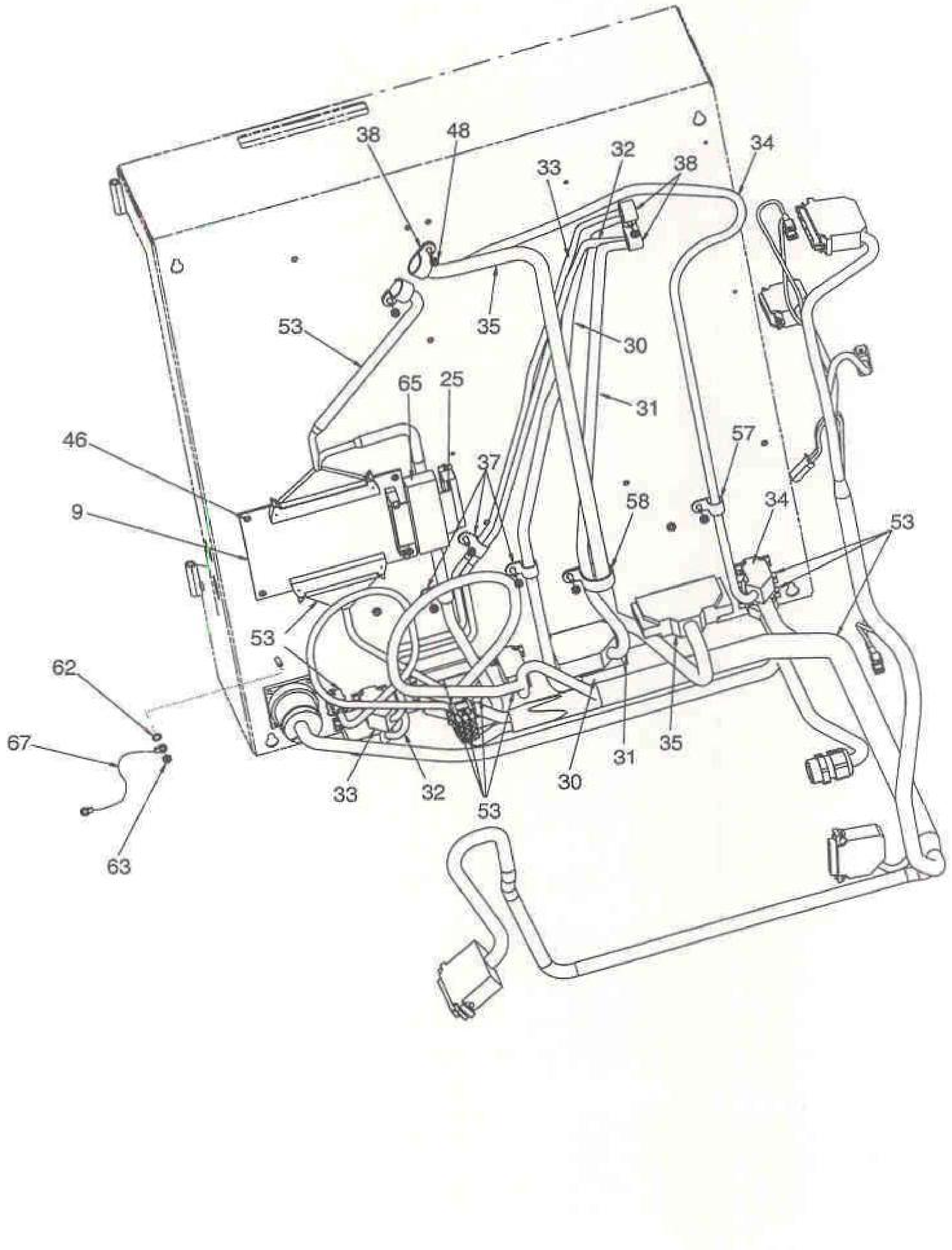
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Figure 9-23. Electronics Enclosure Assembly, Dual

Item No.	Part Number	Description	Qty
0	Not Available	ELECTRONIC ENCLOSURE ASSEMBLY, Dual	
1	Not Available	ENCLOSURE, Main	1
2	Not Available	PANEL, Inside	1
3	78-8094-5267-1	PIN, Hinge	2
4	78-8094-5268-9	PANEL, Cover	1
5	Not Available	ELECTRONICS FAN ASSEMBLY (See Figure 9-24)	1
6	78-8094-5847-0	CABLE RESTRAINT	1
7	78-8092-4165-2	HOST INTERFACE BOARD, (HIB)	1
8	78-8092-4145-4	MACHINE INTERFACE BOARD, (MIB)	1
9	78-8094-5116-0	POWER DISTRIBUTION BOARD, (PDB)	1
10	78-8092-4146-2	SYSTEM CONTROLLER BOARD, (SCB)	1
12	78-8094-5141-8	CABLE ASSEMBLY, MIB/SCB	1
13	78-8094-5142-6	CABLE ASSEMBLY, Internal Optics Data	1
14	78-8094-5144-2	CABLE ASSEMBLY, Internal Optics Control	1
15	78-8094-5146-7	CABLE ASSEMBLY, Internal Optics Power	1
16	78-8094-5148-3	CABLE ASSEMBLY, Internal Optics Atten.	1
17	78-8094-5150-9	CABLE ASSEMBLY, BP/MF	1
18	78-8094-5151-7	CABLE ASSEMBLY, Barcode	1
19	78-8094-5152-5	CABLE ASSEMBLY, Internal Densitometer	1
20	78-8094-5154-1	CABLE ASSEMBLY, Internal Local Panel	1
21	78-8094-5156-6	CABLE ASSEMBLY, 24 VAC	1
22	78-8094-5157-4	CABLE ASSEMBLY, Solenoids	1
23	78-8094-5158-2	CABLE ASSEMBLY, Motors	1
24	78-8094-5159-0	CABLE ASSEMBLY, Internal PDB/SCB	1
25	78-8094-5160-8	CABLE ASSEMBLY, External PDB/SCB	1
26	Not Available	HARNESS ASSEMBLY, IPB/SCB DC Power	1
27	Not Available	HARNESS ASSEMBLY, MIB DC Power	1
28	78-8094-5164-0	HARNESS ASSEMBLY, Service Switch	1
29	78-8094-5994-0	CABLE ASSEMBLY, HIB/MPC	1
30	78-8094-5143-4	CABLE, MOLDED, External Optics Data, I/O Interconnect	1
31	78-8094-5145-9	CABLE, MOLDED, External Optics Control, I/O Interconnect	1
32	78-8094-5147-5	CABLE, MOLDED, External Optics Power, I/O Interconnect	1
33	78-8094-5149-1	CABLE, MOLDED, External Optics Atten, I/O Interconnect	1
34	78-8094-5153-3	CABLE, MOLDED, External Densitometer, I/O Interconnect	1
35	78-8094-5155-8	CABLE, MOLDED, External Local Panel, I/O Interconnect	1
37	Not Available	CLAMP, Cable, Nylon, 1/2"	2
38	Not Available	CLAMP, Nylon	4
39	26-1011-6847-9	SWITCH, Push-pull (RESET), 0.1 A 125 VAC	1
40	Not Available	TIE MOUNT, Adhesive Backed	12
41	Not Available	TIE WRAP	12
42	Not Available	CLAMP	9

43	Not Available	SHIELD	7
44	Not Available	SHIELDING, Electrical	23
45	26-1004-3945-9	FASTENER, 4-40 THD X .5	12
46	26-1002-3977-6	SCREW, Mach, Pan Head, Phil, Metric, M3 X 0.5 X 8.0	22
47	26-1003-7120-7	SCREW, Mach, Pan Head, Phil, Metric, M4 X 0.7 X 8.0, Sems, External Tooth	21
48	26-1009-7311-9	NUT, Lock, Metric, M4. (with nylon insert)	9
49	Not Available	GUIDE	4
50	Not Available	LABEL, Damage, Static Electricity	
51	78-8016-5859-8	RING, Retaining, External, E-Ring	4
52	26-1011-4695-4	TAPE, Foam, .125 T X .500 W (Bulk)	AR
53	Not Available	HARNESS ASSEMBLY, Module Interconnect	1
55	26-1008-9104-8	WASHER, Metric, Plain, M3	4
58	Not Available	CLAMP, Nylon	1
60	26-1007-2397-7	NUT, Mach, Metric, M4 X 0.7, Keps	3
61	26-1011-6809-9	WASHER, Metric, Lock, M4, External Tooth	3
62	26-1011-6808-1	WASHER, Metric, Lock, M5, External Tooth	1
63	26-1011-6643-2	NUT, Metric, Mach, M5 X 0.8, Keps	1
64	78-8092-4164-5	CABLE ASSEMBLY, Panel Ground	1
65	Not Available	SHIELD, Flat Cable Clamp	2
66	26-1011-6671-3	SHIELD, Ferrite	1
67	78-8094-5485-9	CABLE ASSEMBLY, Platen Ground	1
68	78-8056-4242-4	PWA, Dual Printer , Remote I	1
69	78-8094-5992-4	CABLE ASSEMBLY, HIB/Fiber	1
70	78-8092-4030-8	SUPPORT, PCB	1
71	78-8092-9058-0	PLATE, End	1
72	78-8092-4033-2	PLATE, Cover	1
75	26-1011-4075-9	NUT, Hex, 3/8-32 X .089	2
76	26-1002-2148-5	WASHER, Metric, Lock, .377 ID X .507 OD X .022 T, Internal Tooth	2
78	78-8094-9055-6	STANDOFF	1
79	26-1002-5209-2	SCREW, Mach, Pan Head, Phil, Metric, 4-40 X .625	4

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Figure 9-24. Electronics Fan Assembly

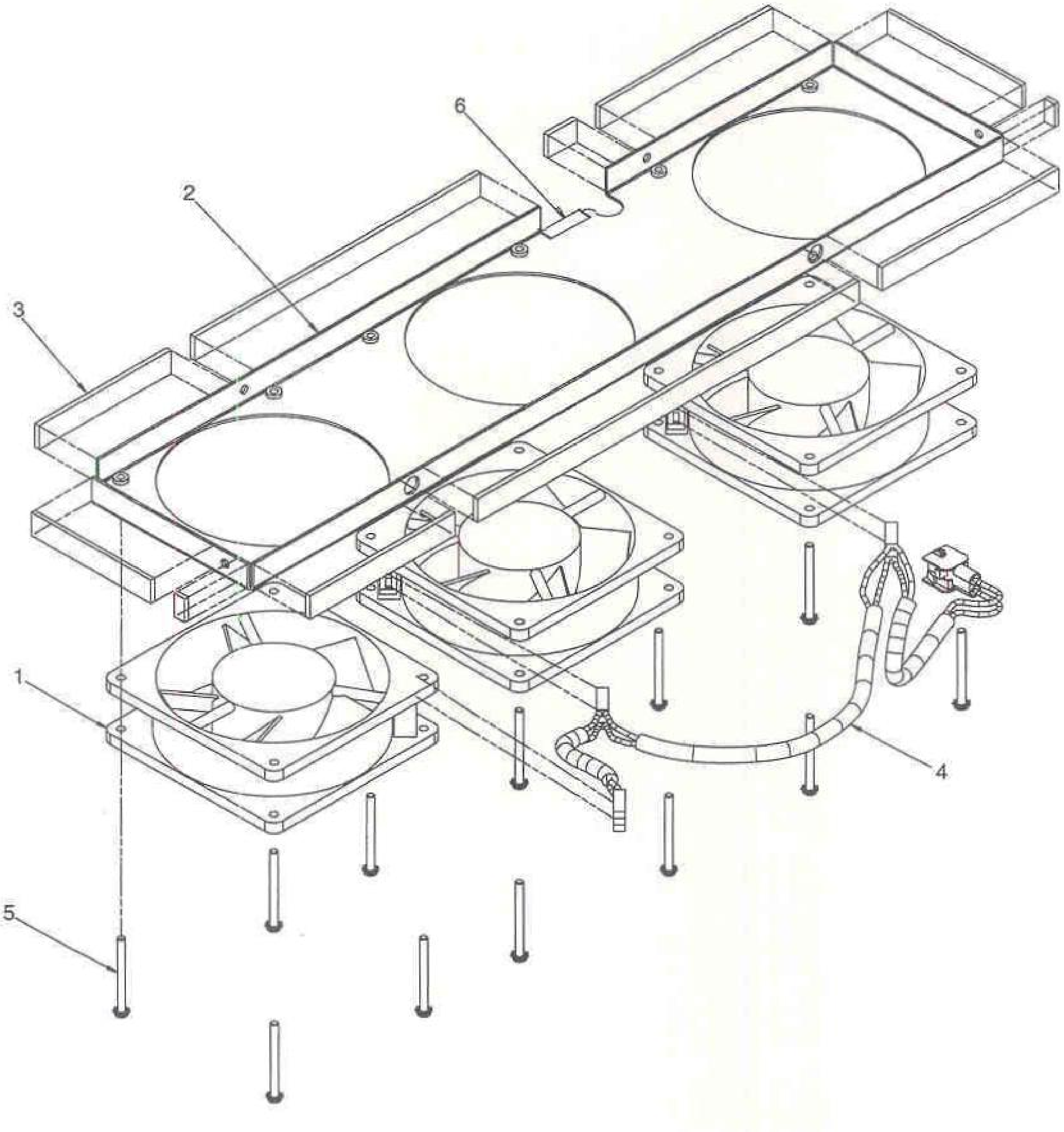
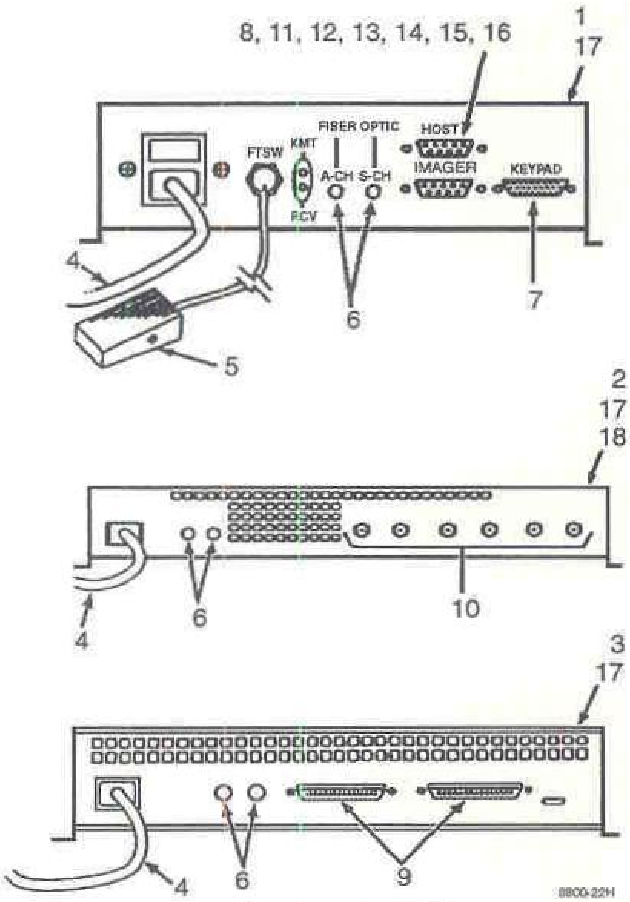


Figure 9-24. Electronics Fan Assembly

Item No.	Part Number	Description	Qty
0	Not Available	ELECTRONICS FAN ASSEMBLY	
1	26-1011-6785-1	FAN, 115 V 50/60 HZ	3
2	78-8094-5296-0	BRACKET, Fan	1
3	26-1011-4695-4	TAPE, Foam	AR
4	78-8094-5163-2	HARNESS ASSEMBLY, Fan Power	1
5	26-1011-6786-9	SCREW, Mach, Pan Head, Phil, M4 X 0.7 X 45, Sems External Tooth	12
6	26-1002-6586-2	GROMMET, Nylon	AR

Figure 9-25. External System Interfaces/Cabling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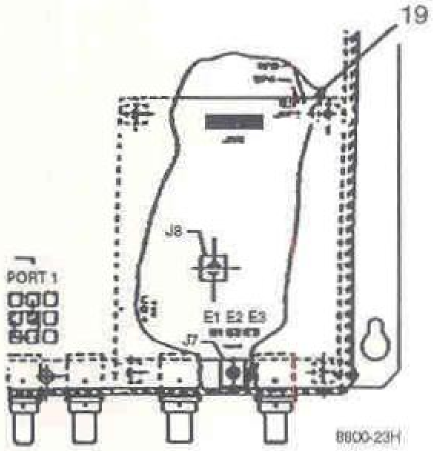
Note

The Keypad Fiber Electronic Interface Box (KFEIB) is not stocked as a service part. If a KFEIB fails, order a UKEIB to replace it.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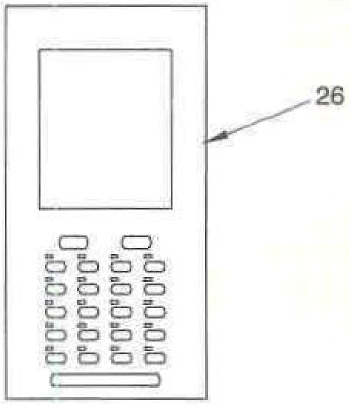
VEIB with PLL Module Installed



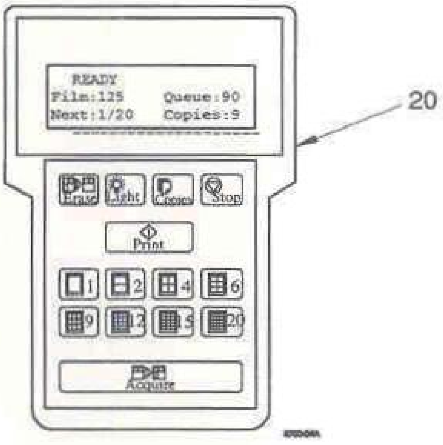

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Figure 9-25. External System Interfaces/Cabling

Item No.	Part Number	Description	Qty
1	78-8077-4135-6	UNIVERSAL KEYPAD ELECT. INTERFACE (UKEIB) (See Note 1)	1
2	78-8077-4201-6	DIGITAL ELECTRONIC INTERFACE BOX (DEIB)	1
3	78-8077-4199-2	VIDEO ELECTRONIC INTERFACE BOX (VEIB)	1
4A	78-8063-3751-1	POWER CORD ASSY (U.L./SCA Rated Only)	1
4B	78-8077-4272-7	POWER CORD ASSY (International)	AR
5	78-8075-2572-6	FOOTSWITCH	AR
6A	78-8075-2605-4	CABLE, Fiber Optic, 3m (10 Ft.)	AR
6B	78-8063-3684-4	CABLE, Fiber Optic, 10m (33 Ft.)	AR
6C	78-8063-3685-1	CABLE, Fiber Optic, 30m (98 Ft.)	AR
6D	78-8063-3686-9	CABLE, Fiber Optic, 60m (198 Ft.)	AR
6E	78-8063-3687-7	CABLE, Fiber Optic, 100m (330 Ft.)	AR
6F	78-8075-2606-2	CABLE, Fiber Optic, l50m (495 Ft.)	AR
6G	78-8075-2607-0	CABLE, Fiber Optic, 200m (660 Ft.)	AR
6H	78-8075-2608-8	CABLE, Fiber Optic, 250m (825 Ft.)	AR
6J	78-8063-3688-5	CABLE, Fiber Optic, 300m (1090 Ft.)	AR
6K	78-8063-3689-3	CABLE, Fiber Optic, 500m (1652 Ft.)	AR
6L	78-8063-3956-6	CABLE, Fiber Optic, 1000m (3300 Ft.)	AR
7	78-8077-4097-8	CABLE, Keypad	1
8A	78-8053-4646-3	CABLE, RS232, 15 Ft.	AR
8B	78-8053-4647-1	CABLE, RS232, 25 Ft.	AR
8C	78-8053-4648-9	CABLE, RS232, 50 Ft.	AR
9A	78-8053-4697-6	CABLE, Digital, 3m (10 Ft.)	AR
9B	78-8053-4134-0	CABLE, Digital, 10m (33 Ft.)	AR
9C	78-8053-4135-7	CABLE, Digital, 30m (98 Ft.)	AR
9D	78-8053-4139-9	CABLE, Digital, 60m (197 Ft.)	AR
10A	78-8053-4695-0	CABLE, Analog, 3m (10 Ft.)	AR
10B	78-8053-4059-9	CABLE, Analog, 10m (33 Ft.)	AR
10C	78-8053-4034-2	CABLE, Analog, 30m (98 Ft.)	AR
10D	78-8053-4033-4	CABLE, Analog, 60m (197 Ft.)	AR
11	78-8071-8331-0	RS232 to UKEIB Host Contr. Adapt. Cable (25-pin to 9-pin)	AR
12	78-8077-4159-6	RS422 to UKEIB Host Contr. Adapt. Cable (37-pin to 9-pin)	AR
13	26-1007-4918-8	ADAPTOR, RS422 Connector (Male/Male)	AR
14	26-1007-0924-0	ADAPTOR, RS422 Connector (Female/Female)	AR
15	78-8063-4088-7	DDIU to UKEIB Adapt. Cable (37-pin M to 26-pin M)	AR
16A	78-8075-2603-9	CABLE, Genesis (GE), 10m (33 Ft.)	AR
16B	78-8075-2542-9	CABLE, Genesis (GE), 30m (98 Ft.)	AR
16C	78-8075-2543-7	CABLE, Genesis (GE), 60m (197 Ft.)	AR
16D	78-8075-2604-7	CABLE, Genesis (GE), 100m (330 Ft.)	AR
17	78-8077-4026-7	POWER SUPPLY, EIB	1
18	78-8063-3672-9	FAN, VEIB	1
19A	78-8063-3641-4	PLL, 50 MHZ, VEIB	AR

19B	78-8077-4315-4	PLL, 110 MHZ, VEIB	AR
20	78-8092-4148-8	KEYPAD, 3M DryView 8700	AR
21	78-8094-5482-6	CABLE, Extension, 10m (33 ft.), DryView 8700 Keypad (Not shown)	AR
22	78-8094-5481-8	CABLE, Extension, 30m (98 ft.), DryView 8700 Keypad (Not shown)	AR
23	78-8094-5480-0	CABLE, Extension, 60m (198 ft.), DryView 8700 Keypad (Not shown)	AR
24	26-1000-4144-6	RECEPTACLE, Wall Outlet, (Not Shown)	AR
25	26-1011-8096-1	COVER, Wall Outlet, Black, (Not Shown)	AR
26	78-8092-4038-1	KEYPAD, 3M	AR

Note 1. The Keypad Fiber Electronic Interface Box (KFEIB) is not stocked as a service part. If a KFEIB fails, order a UKEIB to replace it.

Figure 9-11. Plate Wrist Assembly

Item No.	Part Number	Description	Qty
0	Not Available	PLATE WRIST ASSEMBLY	1
1	Not Available	PLATE, Wrist, Pickup	1
2	78-8094-5087-3	HOLDER, Sensors, Pickup	1
3	78-8094-5741-5	SPRING, Sensor, Pickup	2
4	78-8094-5088-1	BUTTON, Sensor, Pickup	2
5	26-1003-7121-5	SCREW, Mach, Pan Head, Phil, Metric, M4 X 0.7 X 10.0, Sems, External Tooth	1
6	78-8094-5694-6	CUP, Round, Pickup	3
7	78-8094-5607-8	SLIDE, Sucker, Pickup	3
8	78-8094-5614-4	SPRING, Sucker, Pickup	3
9	78-8094-5606-0	HOUSING, Sucker, Pickup	3
10	26-1003-7115-7	SCREW, Mach, Pan Head, Phil, Metric, M3 X 0.5 X 6.0, Sems, External Tooth	3
11	12-7996-5868-2	RING, Retaining, External, E-Ring	3
12	26-1011-6728-1	FITTING, Elbow, 10-32 UNF Male Thd X 1/8 ID Tubing, 90 DEG, Nylon	3
13	26-1011-6726-5	FITTING, Tee, For 5/32 ID Tubing, Nylon	2
14	26-1011-6729-9	TUBING, Silicone, .125 ID X .250 OD	AR
15	Not Available	ADHESIVE	AR
16	Not Available	TIE WRAP	2
17	Not Available	MOUNT, Cable Tie	2
18	Not Available	CLAMP, Cable	1

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Figure 9-12. Transport Module Assembly
(Screen 1 of 4)

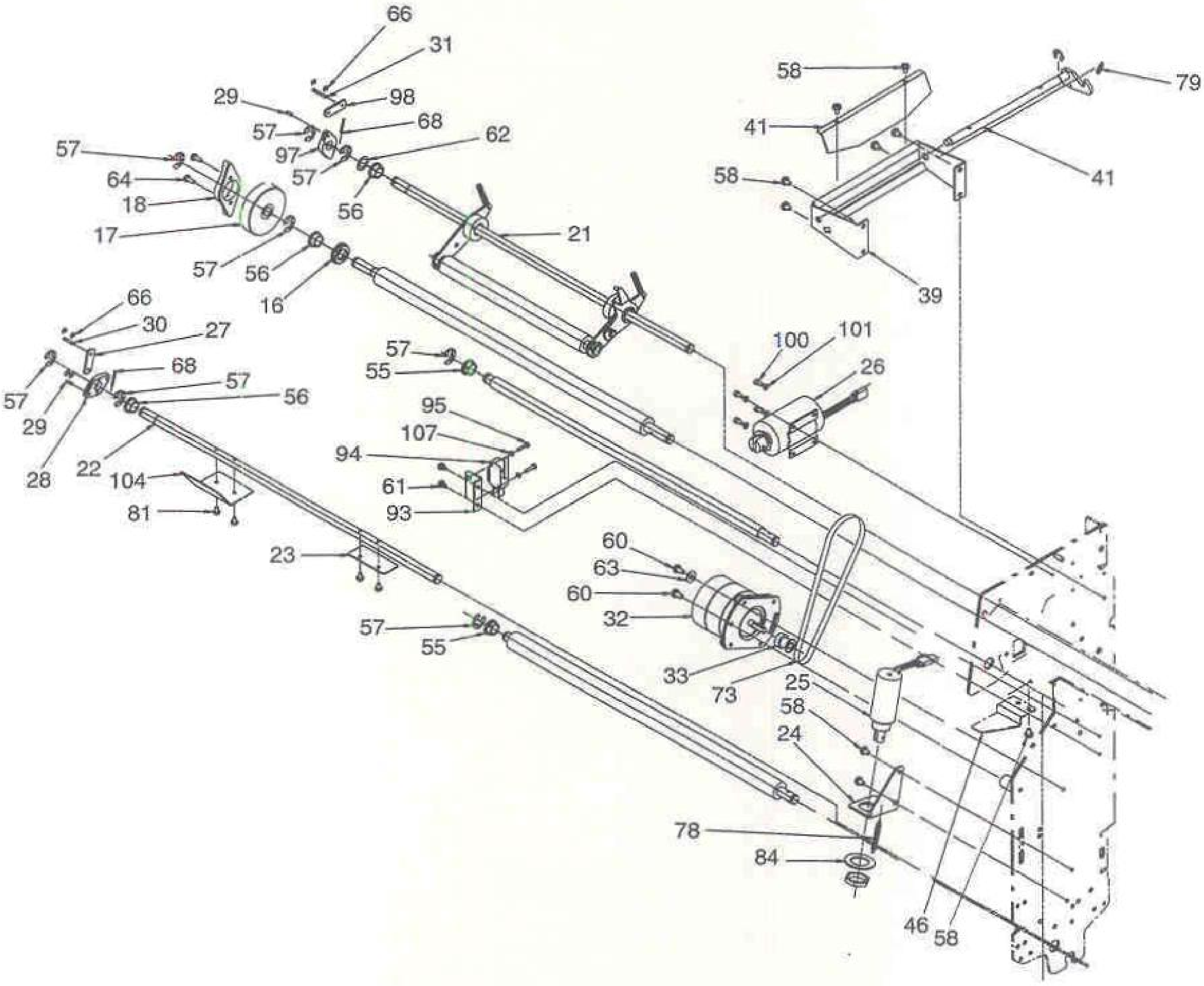
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Figure 9-12. Transport Module Assembly
(Screen 2 of 4)

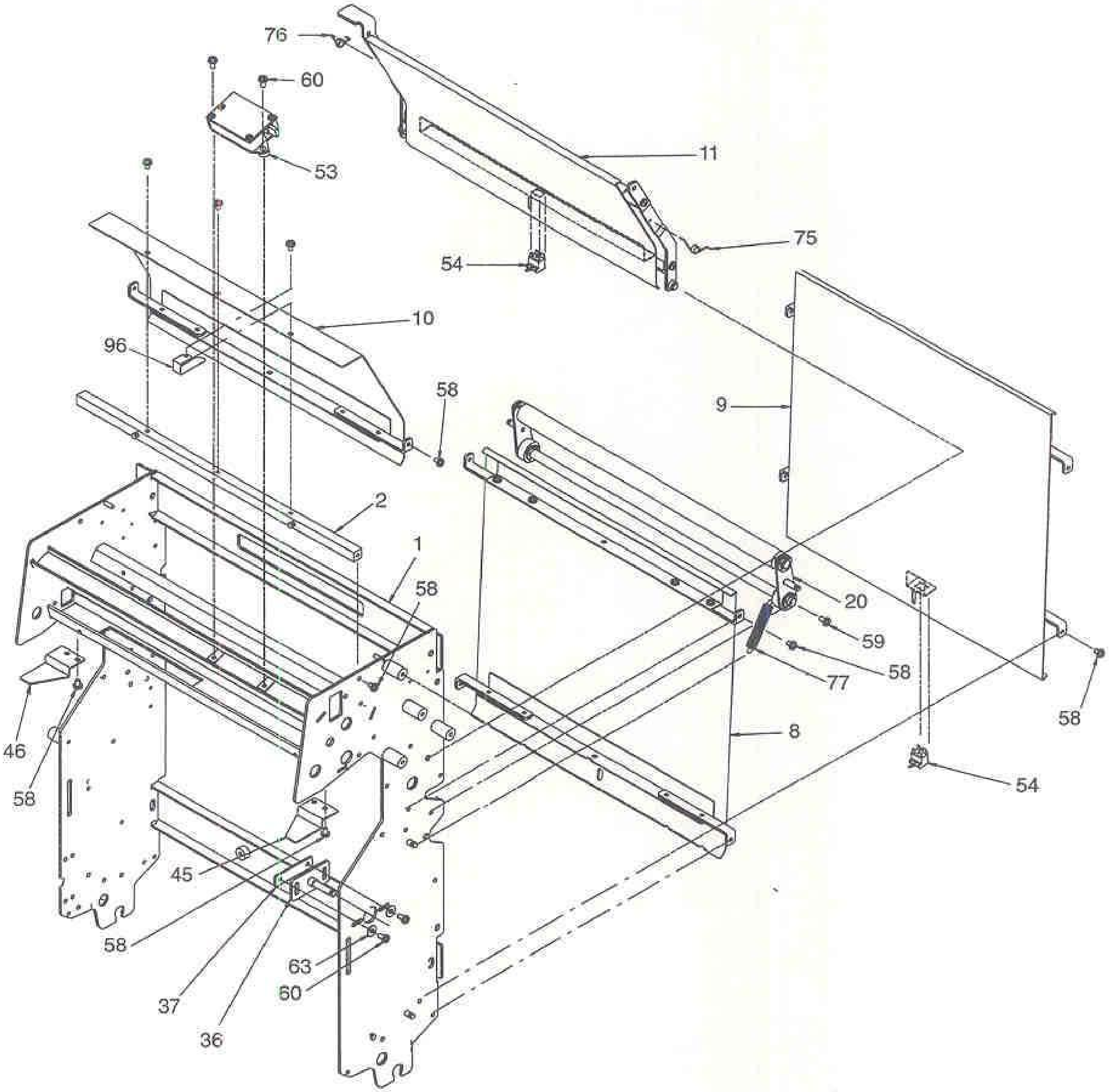
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Figure 9-12. Transport Module Assembly
(Screen 3 of 4)

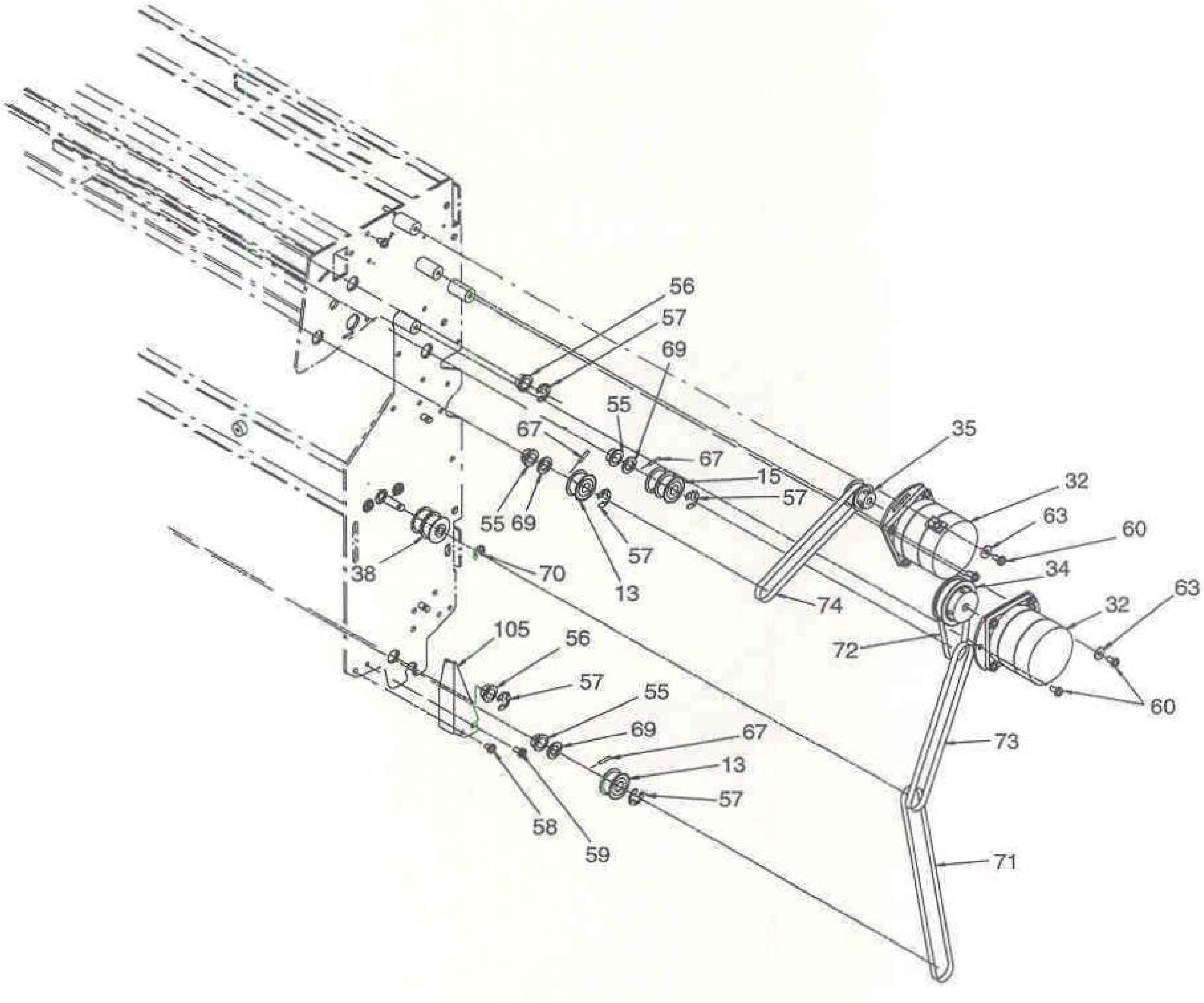
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Figure 9-12. Transport Module Assembly
(Screen 4 of 4)

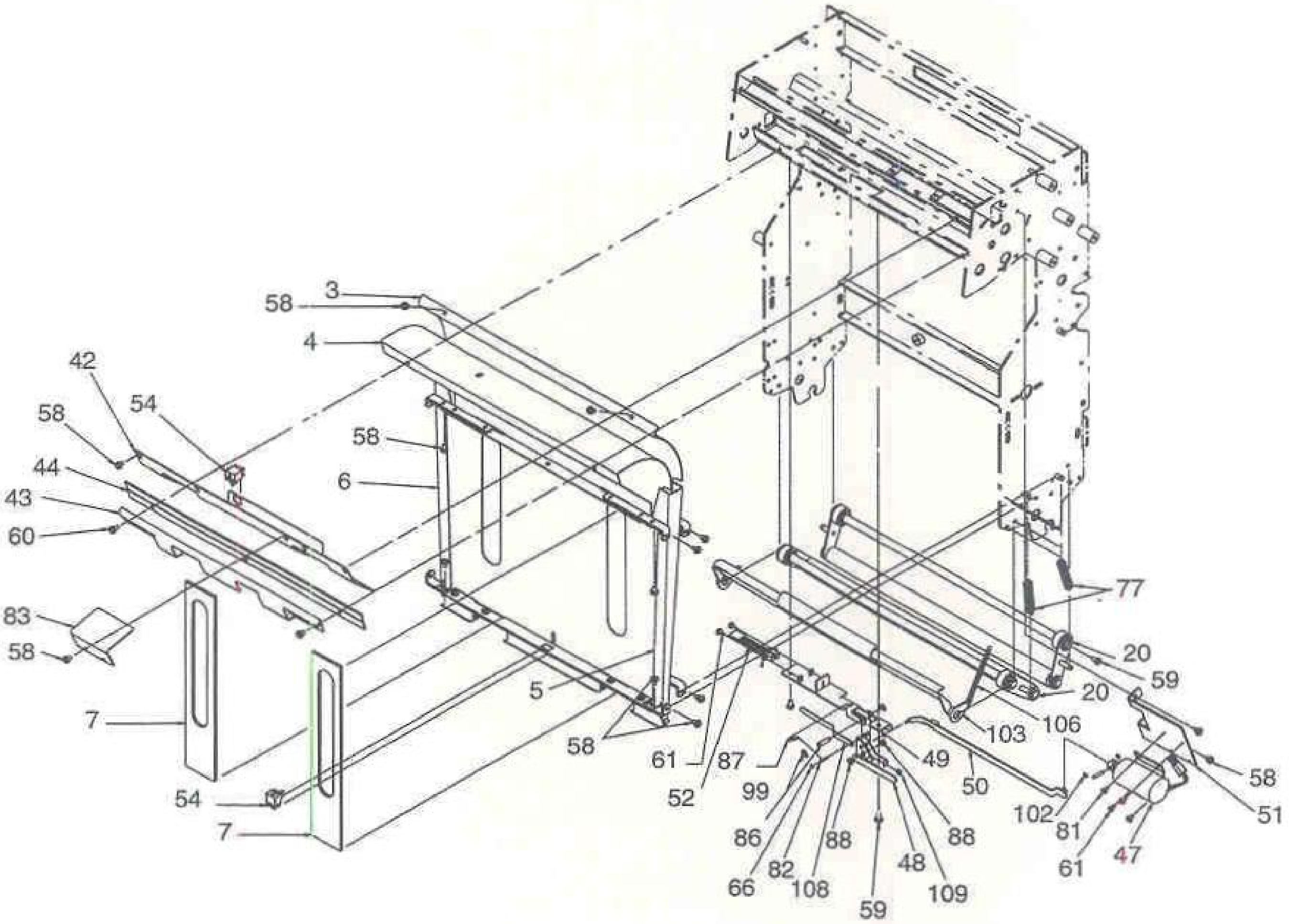
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Figure 9-12. Transport Module Assembly

Item No.	Part Number	Description	Qty
0	78-8094-5700-1	TRANSPORT MODULE ASSEMBLY	1
1	Not Available	FRAME, Transport	1
2	Not Available	BAR, Support Transport	1
3	Not Available	ENTRY GUIDE BACK ASSEMBLY	1
4	Not Available	ENTRY GUIDE FRONT ASSEMBLY	1
5	Not Available	GUIDE, Film, Edge, Right Hand	1
6	78-8094-5241-6	GUIDE, Film, Edge, Left Hand	1
7	78-8094-5455-2	COVER, Slot	2
8	Not Available	EXIT GUIDE FRONT ASSEMBLY	1
9	Not Available	EXIT GUIDE BACK ASSEMBLY	1
10	78-8094-5703-5	TRANSPORT GUIDE FRONT ASSEMBLY	1
11	78-8094-5704-3	TRANSPORT GUIDE BACK ASSEMBLY	1
12	78-8094-5098-0	ROLLER, Entry Drive	1
13	78-8094-5356-2	PULLEY, Mod, Drive Roller	2
14	78-8094-5180-6	ROLLER, Transport Drive	1
15	78-8094-5382-8	PULLEY, Mod Transport Roller	1
16	78-8094-5416-4	BUSHING, Plate	1
17	78-8094-5384-4	CLUTCH PULLEY ASSEMBLY	1
18	78-8094-5571-6	HANDLE, Clutch Pulley	1
19	78-8094-5096-4	ROLLER, Platen Drive	1
20	78-8094-5721-7	ROLL NIP ASSEMBLY	3
21	78-8094-5723-3	FEED ROLLER ASSEMBLY	1
22	78-8094-5185-5	SHAFT, Gate	1
23	78-8094-5186-3	PLATE, Gate	1
24	78-8094-5195-4	BRACKET, Solenoid Gate	1
25	78-8094-5138-4	GATE DOOR SOLENOID ASSEMBLY	1
26	78-8095-9527-1	TRANSPORT FEED SOLENOID ASSEMBLY	1
27	78-8094-5192-1	LINK, Solenoid	1
28	78-8094-5187-1	ACTUATOR, Solenoid	1
29	78-8094-5189-7	PIN, Solenoid	2
30	78-8094-5191-3	PIN, SOlenoid	1
31	78-8094-5961-9	PIN, Solenoid, Feed	1
32	78-8094-5708-4	MOTOR AND PLATE ASSEMBLY	3
33	78-8094-5586-4	PULLEY, Mod, 16T	1
34	78-8095-9501-6	PULLEY, Mod, Transport Motor	1
35	26-1011-6793-5	PULLEY, with Set Screw	1
36	78-8094-5310-9	BRACKET, Takeup	1
37	78-8094-5589-8	PLATE, Nut	1
38	78-8094-5383-6	PULLEY, Mod Idler	1
39	78-8094-5287-9	HANDLE, Latch	1
40	78-8094-5291-1	LATCH, Transport	1

41	78-8094-5289-5	LEVER, Latch	1
42	78-8094-5282-0	GUIDE, Film Top Entry	1
43	78-8094-5745-6	DEFLECTOR	1
44	78-8094-5303-4	BRUSH, Static	1
45	78-8094-5326-5	CORNER, Nip, Right Hand	1
46	78-8094-5327-3	CORNER, Nip, Left Hand	1
47	78-8094-5942-9	TONGUE DEPRESSOR SOLENOID ASSEMBLY	1
48	78-8094-5919-7	ARM, Tongue Depressor	1
49	78-8094-5920-5	BRACKET, Tongue Depressor	1
50	78-8094-5975-9	LINK, Tongue Depressor	1
51	78-8094-5963-5	BRACKET, Solenoid	1
52	78-8094-5129-3	990 SWITCH ASSEMBLY	1
53	78-8094-5726-6	MULTIFEED SENSOR ASSEMBLY	1
54	78-8094-5130-1	850 SWITCH ASSEMBLY	4
55	78-8094-5561-7	BEARING, Mod	5
56	78-8161-4221-6	BEARING, .3765 ID X .502 OD X .062	5
57	12-7996-5868-2	RING, Retaining, External, E-Ring	13
58	26-1003-7119-9	SCREW, Mach, Pan Head, Phil, Metric, M4 X 0.7 X 6.0, Sems, External Tooth	52
59	26-1003-7120-7	SCREW, Mach, Pan Head, Phil, Metric, M4 X 0.7 X 8.0, Sems, External Tooth	7
60	26-1003-7121-5	SCREW, Mach, Pan Head, Phil, Metric, M4 X 0.7 X 10.0, Sems, External Tooth	10
61	26-1003-7115-7	SCREW, Mach, Pan Head, Phil, Metric, M3 X 0.5 X 6.0, Sems, External Tooth	12
62	26-1011-6711-7	WASHER, Spring, .400 ID X .612 OD X .009 T	1
63	26-1008-9102-2	WASHER, Metric, Plain, M4	5
64	26-1003-7754-3	SCREW, Mach, Pan Head, Phil, Metric, M3 X 0.5 X 10,Sems, Internal Tooth	2
65	78-8656-4005-2	RING, Retaining, External, E-Ring	1
66	78-8656-3998-9	RING, Retaining, External, E-Ring	10
67	26-1000-2561-3	PIN, Dowl, .094 DIA X .500	3
68	26-1000-0813-0	PIN, Dowl, .062 DIA X .625	2
69	78-8163-0115-0	BEARING, .385 ID X .625 OD X .062	3
70	12-7996-2818-0	RING, Retaining, External, E-Ring	1
71	26-1011-6330-6	BELT, Stock Drive, .0186 P (40 DP) 235 Grooves, .250 W	1
72	26-1011-6326-4	BELT, Stock Drive, .0186 P (40 DP) 98 Grooves, .250 W	1
73	26-1011-6329-8	BELT, Stock Drive, .0186 P (40 DP) 170 Grooves, .250 W	2
74	26-1011-6327-2	BELT, Stock Drive, .0186 P (40 DP) 150 Grooves, .250 W	1
75	78-8094-5474-3	SPRING, Guide, Right Hand	1
76	78-8094-5475-0	SPRING, Guide, Left Hand	1
77	12-7994-9492-2	SPRING, External, .312 OD X .037 Wire Dia X 1.75	6
78	26-1011-6375-1	SPRING, External, .125 OD X .014 Wire Dia X 1.125	1
79	78-8005-4385-8	SPRING, External, .188 OD X .026 Wire Dia X .750	1
80	26-1006-0708-9	CLAMP, Cable	2
81	78-8094-5964-3	PIN, Solenoid	1
82	78-8094-5925-4	PIN, Link	1
83	78-8094-5793-6	COVER, CB	1
84	26-1004-0974-2	WASHER, Lock, Internal, 3/4	1

85	Not Available	LABEL, Laser, Danger	1
86	78-8094-5924-7	PIN, Arm	1
87	26-1011-7121-8	SPRING, External,.125 OD X .875 .018 Wire	1
88	78-8000-8621-3	BEARING, .1885 BORE X .2343 OD X .078 W	2
89	Not Available	HARNESS ASSEMBLY, Transport, (400)	1
90	Not Available	TIE WRAP	17
91	Not Available	DECAL, Handle	2
92	Not Available	DECAL, Guide Handle	1
93	78-8094-5866-0	MOUNT, Switch	1
94	26-1011-6938-6	SWITCH, SPDT, 10 A 125, 250, 277 VAC .5 A 125 VDC	1
95	26-1002-6282-8	SCREW, Mach, Pan Head, Phil, Metric, M2.5 X 0.45 X 12.0	2
96	78-8092-5409-3	BRACKET, Harness	1
97	78-8094-5959-3	ACTUATOR, Solenoid, Feed	1
98	78-8092-4080-3	LINK, Solenoid, Feed	1
99	78-8656-4001-1	RING, Retaining, External, E-Ring	2
100	78-8010-7213-9	SCREW, Cap, Hex Socket, Metric, M3 X 0.5 X 6.0	4
101	26-1001-0124-0	WASHER, Metric, Lock, A3.2 ID X 6.0 OD X .8, External Tooth	4
102	78-8656-4000-3	RING, Retaining, External, E-Ring	2
103	78-8094-5833-0	BAR, Film Release	1
104	78-8094-5834-8	PLATE, Gate, Extended	1
105	78-8094-5844-7	STOP, Bar Release	1
106	26-1011-7155-6	SPRING, External, .188 OD X .024 Wire Dia X 2.500	1
107	26-1001-6361-2	WASHER, Metric, Lock, A2.7 ID X 5.5 OD X .4, External Tooth	2
108	78-8092-4075-3	FLAG, Tongue	1
109	78-8185-5656-1	O-RING, .15625 ID X .28125 X .0625	1

Figure 9-13. Exposure Module Assembly

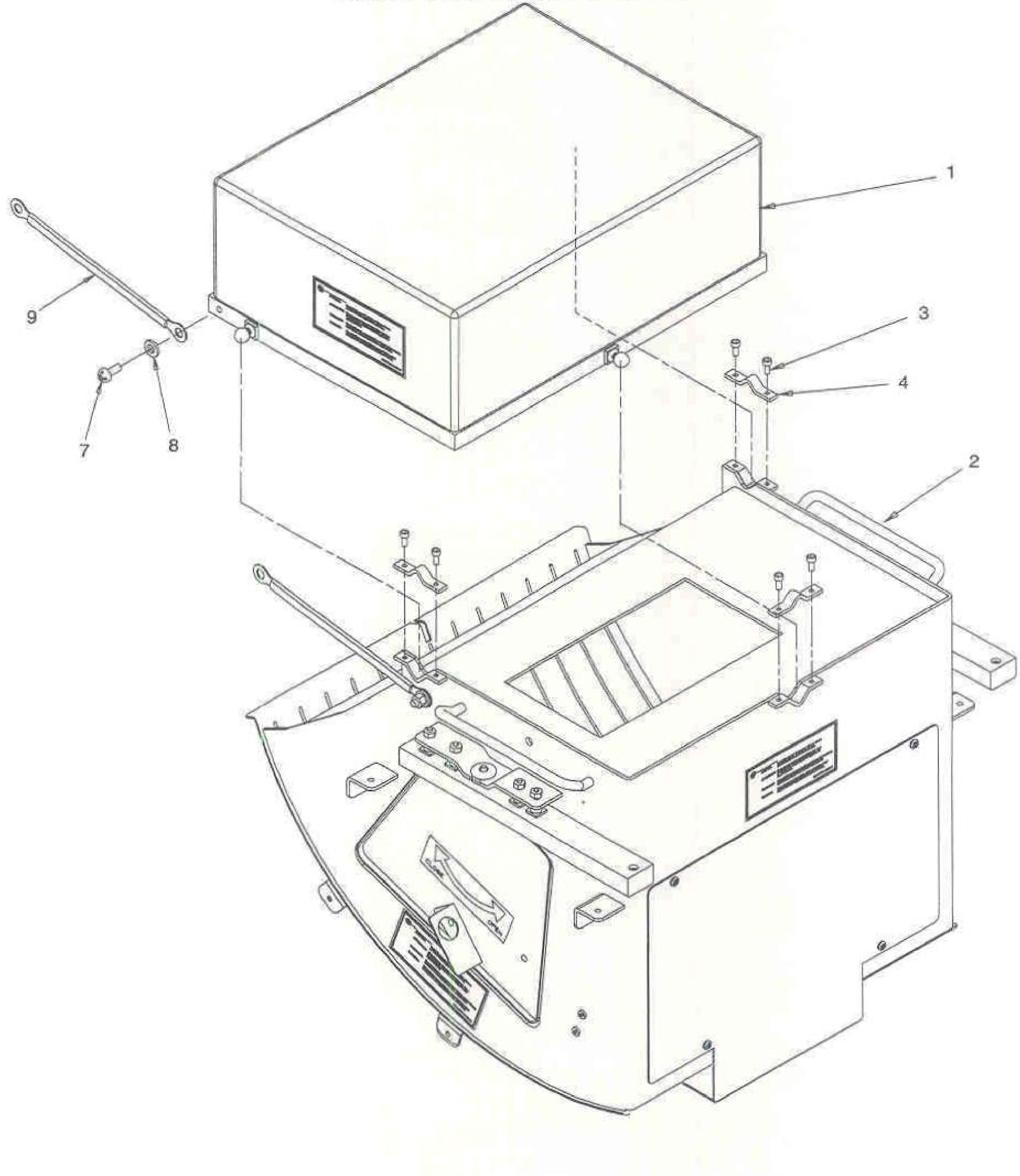

Figure 9-13. Exposure Module Assembly

Item No.	Part Number	Description	Qty
0	Not Available	EXPOSURE MODULE ASSEMBLY	
1	78-8094-5615-1	OPTICS MODULE, 2D Assembly	1
2	78-8094-5536-9	PLATEN ASSEMBLY (See Figure 9-14)	1
3	26-1007-4493-2	SCREW, Cap, Metric, M4 X 0.7 X 10.0, Hex Socket	6
4	78-8094-5524-5	V-CLAMP, Optics	3
7	26-1003-7500-0	SCREW, Mach, Pan Head, Phil, Metric, M6 X 1.0 X 8.0,Sems, External Tooth	1
8	26-1008-5460-8	WASHER, Metric, Lock, M6.0, External Tooth	1
9	78-8094-5485-9	CABLE ASSEMBLY, 701, Platen Ground	1

Figure 9-14. Platen Assembly

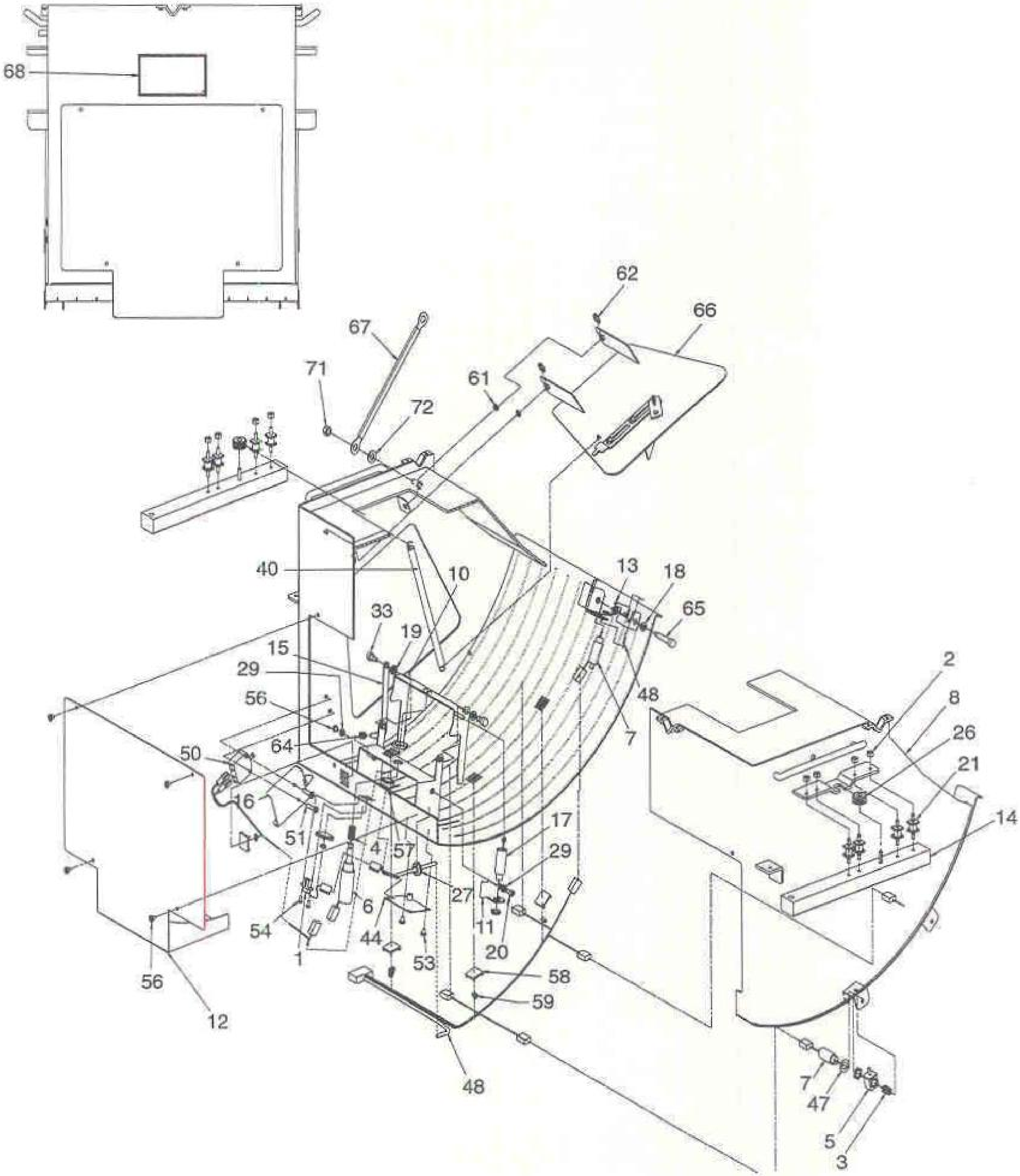
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Figure 9-14. Platen Assembly

Item No.	Part Number	Description	Qty
0	78-8094-5536-9	PLATEN ASSEMBLY	
1	78-8094-5129-3	990 SWITCH ASSEMBLY	1
2	26-1011-6389-2	NUT, Mach, Lock, 8-32,	8
3	78-8094-5271-3	SPRING, Alignment Arm	4
4	78-8095-9367-2	SPRING, Kicker	1
5	78-8094-5715-9	PIN, Rolling, Alignment	4
6	78-8094-5136-8	KICKER SOLENOID ASSEMBLY	1
7A	78-8094-5135-0	PLATEN SOLENOID ASSEMBLY (Y701, Y702, Y703, Y704 and Y705) (For Machines prior to S/N 8701048)	5
7B	78-8092-5400-2	PLATEN SOLENOID ASSEMBLY (Y701, Y702, Y703, Y704 and Y705) (For Machines after S/N 8701048)	5
8	Not Available	WELDMENT, Platen	1
10	78-8094-5525-2	ARM, Kicker	1
11	78-8094-5930-4	BRACKET, Airpot	1
12	78-8094-5527-8	PANEL, Rear	1
13	78-8094-5682-1	LEVER, Hold Down	1
14	78-8094-5531-0	BLOCK, Mounting	2
15	78-8094-5888-4	ARMATURE, Film Sensor	1
16	78-8094-5533-6	BRACKET, SWitch, Platen	1
17	26-1011-7057-4	CYLINDER	1
19	26-1011-6199-5	BEARING, Metric, 6.025 ID 7.20 OD X 2 with 11 DIA flange	4
20	DY-1102-0663-7	SCREW, Cap, Metric, M4 X 0.7 X 10, Hex Socket	1
21	26-1011-6195-3	MOUNT, Cylinder	8
26	78-8613-4822-1	GROMMET, Rubber, 5/16 ID X 13/16 OD with 1/8 groove	2
27	78-8613-4823-9	GROMMET, Rubber, .312 ID X .625 OD W/ .437 DIA X .062 with groove	1
29	26-1011-6201-9	SPACER, Nylon, Round, .312 OD X .171 ID X .125, for #8 screw	2
33	26-1011-8159-7	SCREW, Shoulder, Metric, 6.0 DIA X 6 M5 X 0.8 X 6 Thd, Hex Socket	2
40	78-8005-0188-0	SPRING, External., 375 OD X .045	1
44	78-8094-5112-9	PWA, Beam Power Board	1
46	Not Available	HARNESS ASSEMBLY, Platen	1
47	26-1003-3187-0	WASHER, Lock, 3/8, INT Tooth	4
48	26-1011-6194-6	SPRING, External, 3.00 OD .35 Wire Dia. X 14.0	1
50	26-1011-6202-7	SWITCH, Interlock, 16A 250 VAC (SW703)	1
51	26-1003-7487-0	SCREW, Mach, Pan Head, Phil, Metric, M4 X 0.7 X 20.0, Sems, External Tooth	2
53	26-1011-6387-6	SCREW, Mach, Pan Head, Phil, Metric, M4 X 0.7 X 10	2
54	26-1003-7118-1	SCREW, Mach, Pan Head, Phil, Metric, M3 X 0.5 X 12.0, Sems, External Tooth	2
56	26-1003-7121-5	SCREW, Mach, Pan Head, Phil, Metric, M4 X 0.7 X 10.0, Sems, External Tooth	
57	77-8007-4484-7	BUSHING, Snap, Nylon	1
58	Not Available	MOUNT, Cable Tie	5
59	Not Available	TIE WRAP	5
61	26-1011-6517-8	WASHER,Shoulder, Nylon	2

62	12-7996-2818-0	RING, Retaining, External, E-Ring	2
64	78-8094-5720-9	SPRING, Sensor Arm	1
65	26-1011-6562-4	SCREW, Shoulder, Hex Socket, Metric, 6.0 DIA X 30 M5 X 0.8	1
66	78-8094-5696-1	SIDE ACCESS DOOR ASSEMBLY	1
67	Not Available	CABLE ASSEMBLY, 701, Platen Ground	1
68	Not Available	LABEL, Laser, Danger	2
71	26-1011-6823-0	NUT, Mach, Metric, M6 X 1.00, Keps	1
72	26-1008-5460-8	WASHER, Metric, Lock, M6.0, External Tooth	1

Figure 9-15. Processor Entrance Assembly

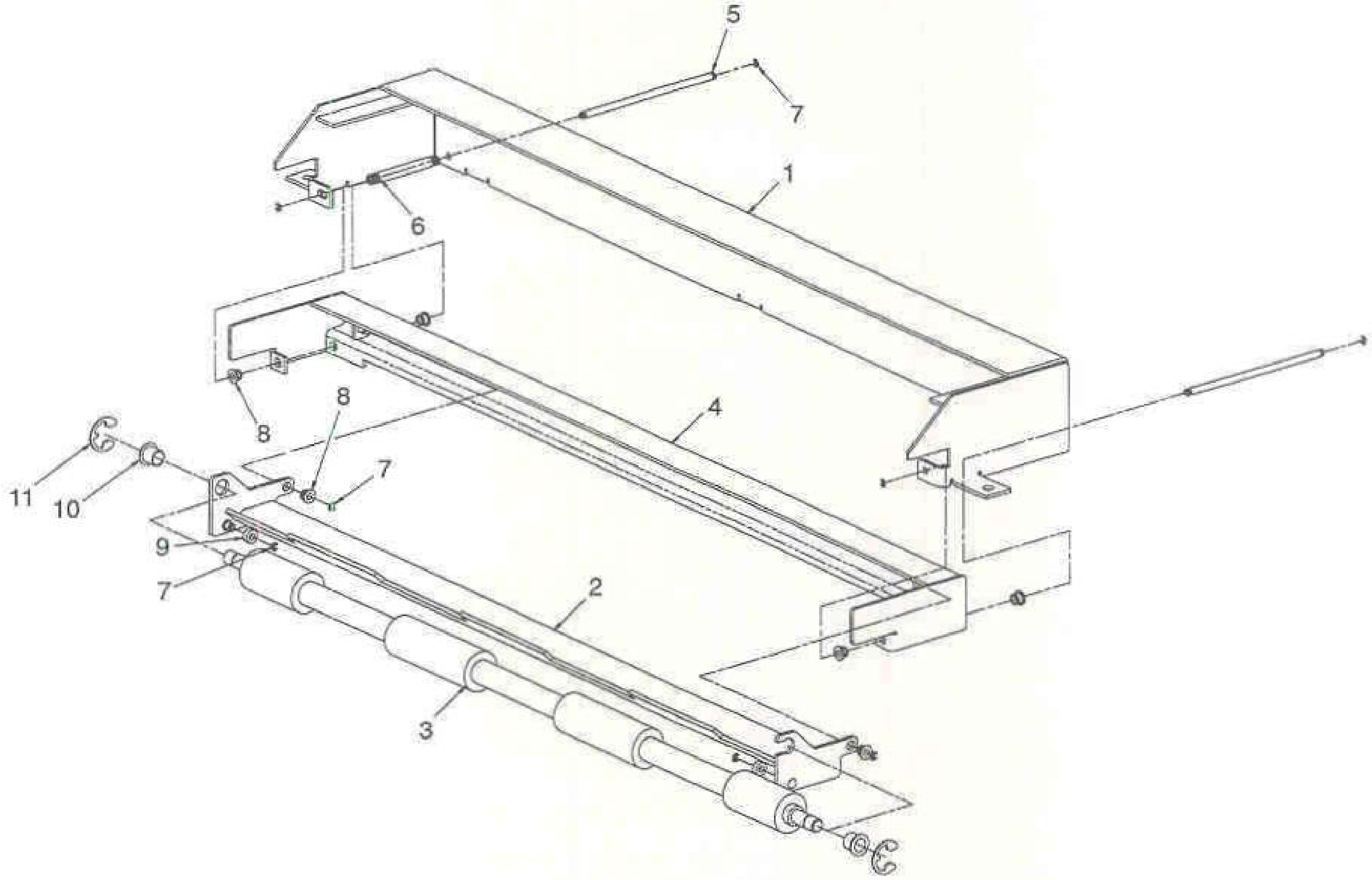
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Figure 9-15. Processor Entrance Assembly

Item No.	Part Number	Description	Qty
0	Not Available	PROCESSOR ENTRANCE ASSEMBLY	1
1	78-8094-5434-7	HOUSING, Entrance	1
2	78-8094-5422-2	SHUTTER, Entrance	1
3	78-8094-5461-0	ROLLER, Slotted, NIP	1
4	78-8094-5647-4	BRACKET, Slide, Processor Entrance	1
5	78-8094-5447-9	SHAFT, Entrance	2
6	26-1011-6814-9	SPRING, Compression, .180 OD X .020 Wire Dia	2
7	78-8656-4000-3	RING, Retaining, External, E-Ring	8
8	78-8001-2446-9	BEARING, .1260 BORE X .1718 OD X .078 W	6
9	26-1011-6815-6	BEARING, BALL, .1250 ID X .2500 OD	2
10	78-8005-7119-8	BEARING, .251 ID X .297 OD X .250,	2
11	12-7996-2818-0	RING, Retaining, External, E-Ring	2

Figure 9-16. Processor Assembly

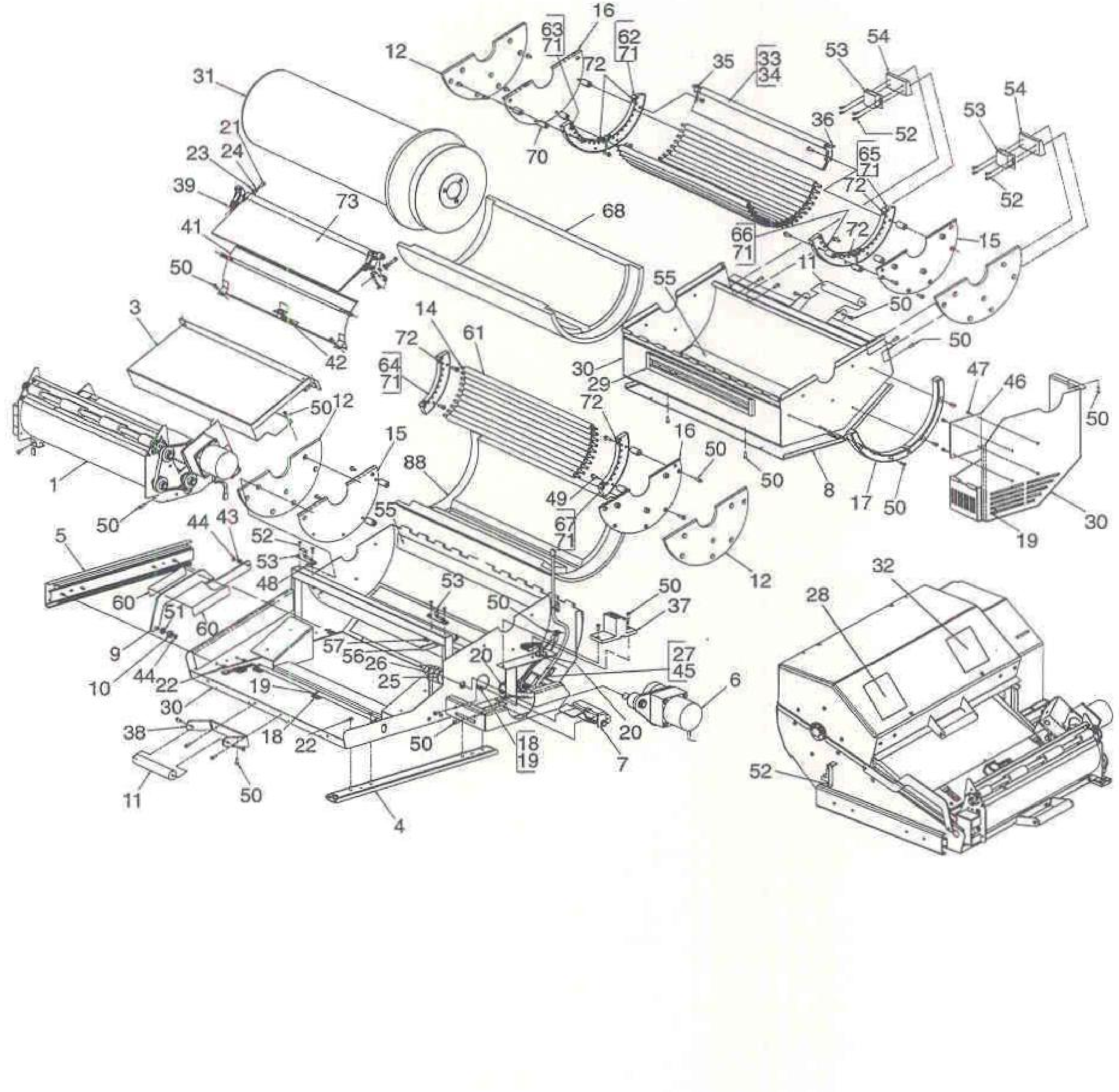
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Figure 9-16. Processor Assembly

Item No.	Part Number	Description	Qty
0	Not Available	PROCESSOR ASSEMBLY	1
1	78-8094-5660-7	EXIT ASSEMBLY (See Figure 9-20)	1
3	78-8095-9490-2	COOLING ZONE, Perforated	1
4	78-8094-5838-9	SLIDE, Two Member	1
5	78-8094-5839-7	SLIDE, Three Member	1
6	78-8095-9399-5	DRIVE PROCESSOR ASSEMBLY	1
7	78-8095-9441-5	PROCESSOR LOCK ASSEMBLY	1
8	78-8095-9445-6	COVER, Top, Processor	1
9	78-8095-9443-1	ROD, Prop, Processor	1
10	78-8095-9444-9	ROLLER, Guide, Prop Rod	1
11	78-8095-9446-4	HANDLE, Grip, Processor	2
12	78-8094-5650-8	INSULATION, End	4
14	Not Available	LUBRICANT, Oil	AR
15	78-8094-5575-7	PLATE, Right Hand	2
16	78-8094-5576-5	PLATE, Left Hand	2
17	78-8095-9366-4	GUIDE, Shroud, Processor	2
18	Not Available	MOUNT, Cable Tie	7
19	Not Available	TIE WRAP	8
20	26-1003-8126-3	BUSHING, Nylon	2
21	DY-1102-0683-5	SCREW, Cap, Hex Socket, Metric, M4 X 0.7 X 16	2
22	26-1007-2397-7	NUT, Mach, Hex, Metric, M4 X 0.7, Keps	8
23	26-1008-9102-2	WASHER, Metric, Plain, M4	2
24	DY-1142-0683-1	WASHER, Metric, Lock, 4.1 ID X 7.6 OD X 0.9 B4	2
25	26-1009-7376-2	WASHER, Metric, Lock, M12	1
26	26-1008-9207-9	NUT, Mach, Hex, Metric, M12 X 1.75	1
27	26-1004-3945-9	FASTENER, Jack Socket Assembly	1
28	Not Available	LABEL, Hot Surface	2
29	78-8053-7098-4	SPONGE, Shield C	AR
30	Not Available	PROCESSOR FRAME ASSEMBLY (See Figure 9-17)	1
31	78-8094-9060-6	PROCESSOR DRUM ASSEMBLY (See Figure 9-19)	1
32	Not Available	LABEL, Sharp Objects	1
33	78-8095-9483-7	BARRIER, Air	1
34	78-8095-9481-1	ROD, Support, Air Stop	1
35	78-8095-9484-5	SUPPORT, Rod, Left Hand.	1
36	78-8095-9482-9	SUPPORT, Rod, Right Hand	1
37	78-8095-9405-0	PROCESSOR BRUSH ASSEMBLY	1
38	78-8095-9451-4	MOUNT, Pull Handle	1
39	78-8094-5722-5	FILM STRIPPER ASSEMBLY (See Figure 9-18)	1
41	78-8094-5445-3	GUIDE, FILM, ENTRANCE	1
42	78-8094-5130-1	850 SWITCH ASSEMBLY	1
43	78-8162-1035-1	BEARING, Nylon	1

44	78-8656-4001-1	RING, Retaining, External, E-Ring	2
45	Not Available	HARNESS ASSEMBLY, Processor, (300)	1
46	78-8094-5104-6	PWA, Processor Communication Board	1
47	26-1002-3976-8	SCREW, Mach, Pan Head, Phil, Metric, M3 X 0.5 X 6.0	4
48	26-1003-7119-9	SCREW, Mach, Pan Head, Phil, Metric, M4 X 0.7 X 6.0, Sems, External Tooth	12
49	26-1003-7760-0	SCREW, Mach, Pan Head, Phil, Metric, M4 X 0.7 X 16, Sems, Internal Tooth	12
50	26-1003-7121-5	SCREW, Mach, Pan Head, Phil, Metric, M4 X 0.7 X 10.0, Sems, External Tooth	49
51	26-1003-3672-1	WASHER, Plain, Nylon, .257 ID X .500 OD X .032	1
52	26-1003-7116-5	SCREW, Mach, Pan Head, Phil, Metric, M3 X 0.5 X 8.0, Sems, External Tooth	14
53	26-1011-7147-3	LATCH, Slam	2
54	78-8095-9454-8	SPACER, Latch, Processor	2
55	70-0060-8362-3	TAPE, 1.00 W X 60 YD X .005	AR
56	78-8094-5808-2	LATCH, Stripper	1
57	26-1011-6784-4	SCREW, Metric, Shoulder, 4 X 3.75 W/M3 X 0.5 THD	1
60	Not Available	LABEL, Processor, Prop Rod	2
61	78-8094-5903-1	ROLLER ASSEMBLY	29
62	78-8094-5935-3	TL RETAINER ASSEMBLY	1
63	78-8094-5936-1	ML RETAINER ASSEMBLY	1
64	78-8094-5937-9	BL RETAINER ASSEMBLY	1
65	78-8094-5938-7	TR RETAINER ASSEMBLY	1
66	78-8094-5939-5	MR RETAINER ASSEMBLY	1
67	78-8094-5940-3	BR RETAINER ASSEMBLY	1
68	78-8092-4003-5	INSULATION, Top	1
69	78-8092-4004-3	INSULATION, Bottom	1
70	78-8092-4001-9	STANDOFF, Retainer	12
71	78-8094-5910-6	CLIP, Inner	6
72	26-1003-5775-0	SCREW, Mach, Metric, FL,PHIL, 90 Deg Countersunk, M4 X 0.7 X 6.0	12
73	78-8092-4093-6	PLATE, Felt	1

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Figure 9-17. Processor Frame Assembly

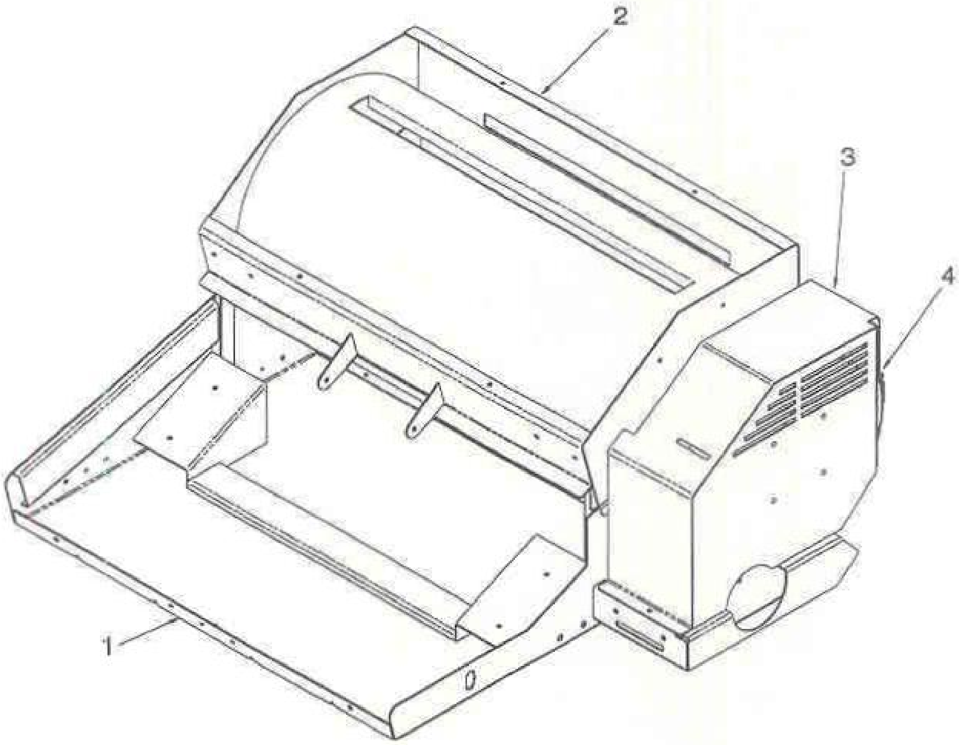

Figure 9-17. Processor Frame Assembly

Item No.	Part Number	Description	Qty
0	Not Available	PROCESSOR FRAME ASSEMBLY	1
1	Not Available	FRAME, Processor	1
2	Not Available	COVER, Processor	1
3	78-8092-4352-6	SHROUD, Processor	1
4	78-8095-9384-7	PIN, Hinge, Processor	1

Figure 9-18. Film Stripper Assembly

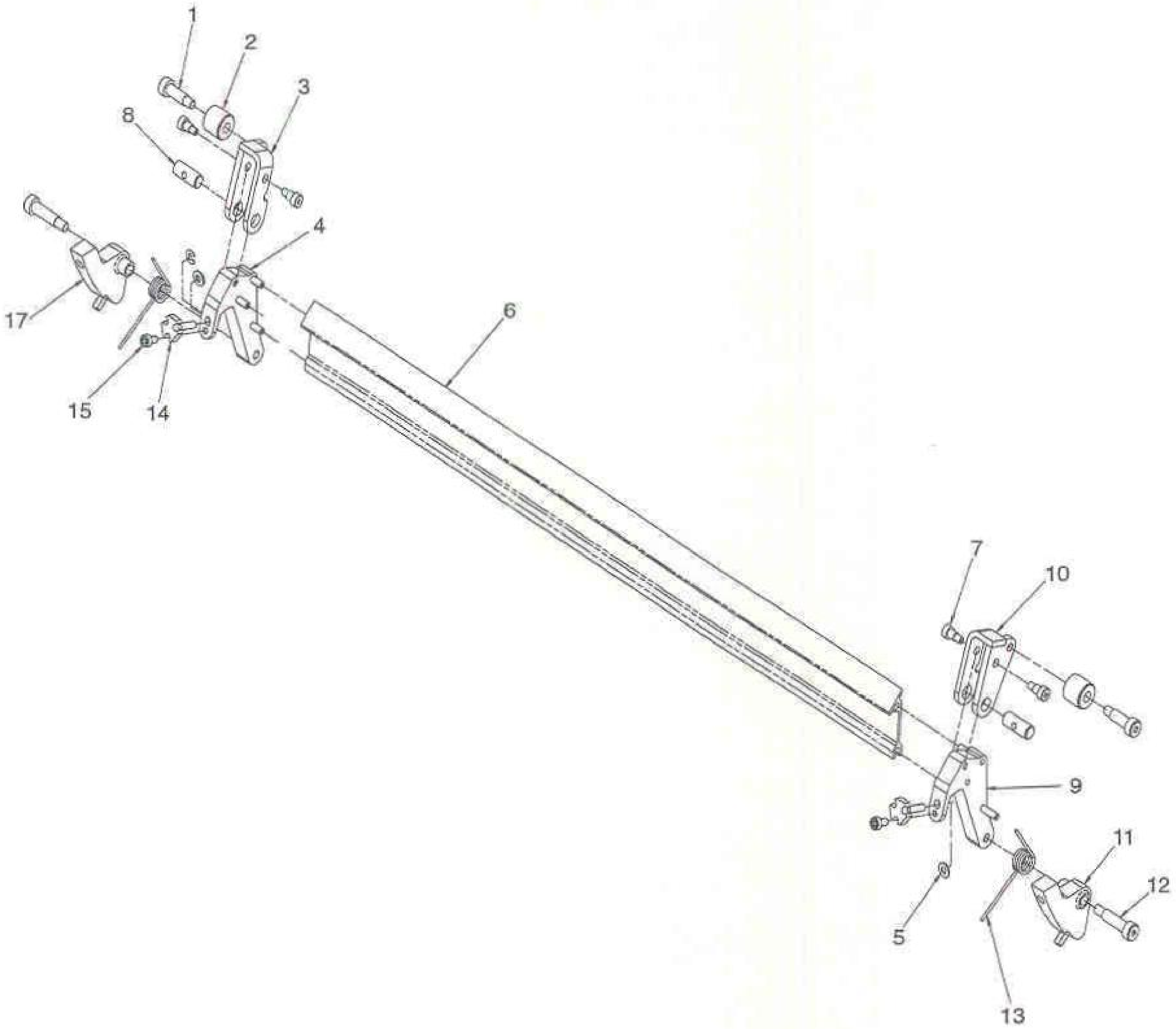
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Figure 9-18. Film Stripper Assembly

Item No.	Part Number	Description	Qty
0	78-8094-5722-5	FILM STRIPPER ASSEMBLY	
1	Not Available	SCREW, Shoulder, Hex Socket, Metric, 5.0 DIA X 12 W/M4 X 0.7 THD	2
2	Not Available	ROLLER, Adjuster	2
3	Not Available	ADJUSTER, Left Hand, Stripper	1
4	Not Available	MOUNT, Left Hand, Stripper	1
5	Not Available	RING, Retaining, External, E-Ring	2
6	Not Available	BLADE, Stripper	1
7	Not Available	SCREW, Shoulder, Hex Socket, Metric, 3.987 D X 4.013 W/M3 X 0.5 THD	4
8	Not Available	PIN, Adjuster, Stripper	2
9	Not Available	MOUNT, Right Hand, Stripper	1
10	Not Available	ADJUSTER, Right Hand, Stripper	1
11	Not Available	BRACKET, Right Hand, Mount, Stripper	1
12	Not Available	SCREW, Shoulder, Hex Socket, Metric, 5.0 DIA X 16 W/M4 X 0.7 THD	2
13	78-8095-9395-3	SPRING, Torsion, Stripper	2
14	78-8095-9521-4	SCREW, Adjuster, Stripper	2
15	Not Available	SCREW, Cap, Hex Socket, Metric, M3 X 0.5 X 6.0	2
17	Not Available	BRACKET, Left Hand, Mount, Stripper	1

Figure 9-19. Processor Drum Assembly

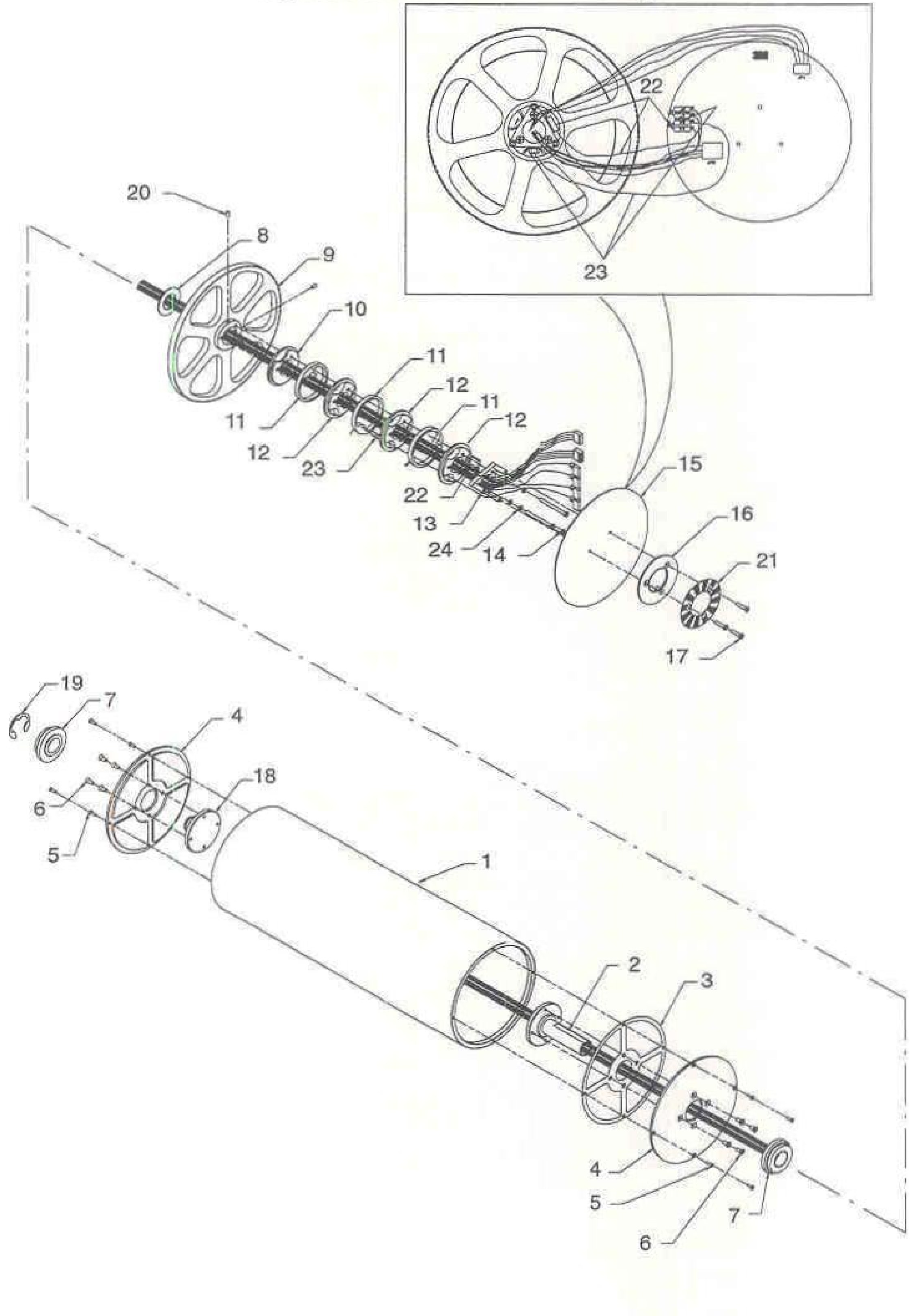
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Figure 9-19. Processor Drum Assembly

Item No.	Part Number	Description	Qty
0	78-8094-9060-6	PROCESSOR DRUM ASSEMBLY	1
1A	Not Available	PROCESSOR DRUM SUB-ASSEMBLY	1
1B	78-8095-9373-0	FUSE, Modified (Located in Drum/Heater and Coating Assembly)	1
2	Not Available	SHAFT, Electrical	1
3	Not Available	GROUND, Drum	1
4	Not Available	CAP, End, Drum	2
5	26-1009-7248-3	SCREW, Cap, Hex Socket, Metric, M3 X 0.5 X 10	8
6	Not Available	SCREW, Cap, Hex Socket, M4 X 0.7 X 10	8
7	Not Available	BEARING, Housing, Drum	2
8	Not Available	BEARING, 24 ID X 42 OD X 1.5	
9	Not Available	GEAR, Drum, 160 Tooth Modified	1
10	Not Available	SPACER, Ground	1
11	78-8095-9306-0	RING, Slip	3
12	Not Available	SPACER	3
13	Not Available	COLLAR, PC Mount	1
14	Not Available	SCREW, Mach, Pan Head, Phil, Metric, M4 X 0.7 X 50	3
15A	78-8094-5488-3	PWA, Rotating Processor Board	1
15B	26-1011-6238-1	FUSE, 1/4 Amp, 250V (located on Rotating Processor Board)	1
16	Not Available	REFLECTOR, Sensor	1
17	Not Available	SCREW,Cap, Hex Socket, Metric, M4 X 0.7 X 20.0	3
18	Not Available	SHAFT, Short, Drum	1
19	Not Available	RING, Retaining, External, E-Ring	1
20	Not Available	SCREW, Set, Hex Socket, Metric, M4 X 0.7 X 8.0, Cup Pt	2
21	78-8095-9339-1	DECAL, Sensor Reflector	1
22	Not Available	CABLE ASSEMBLY, 301, (P1 PROC)	1
23	Not Available	CABLE ASSEMBLY, 302, (P2 PROC)	1
24	26-1011-6641-6	WASHER, Metric, Lock, J4.3 ID X 8.0 OD X .5, Internal Tooth	3

Figure 9-20. Exit Assembly

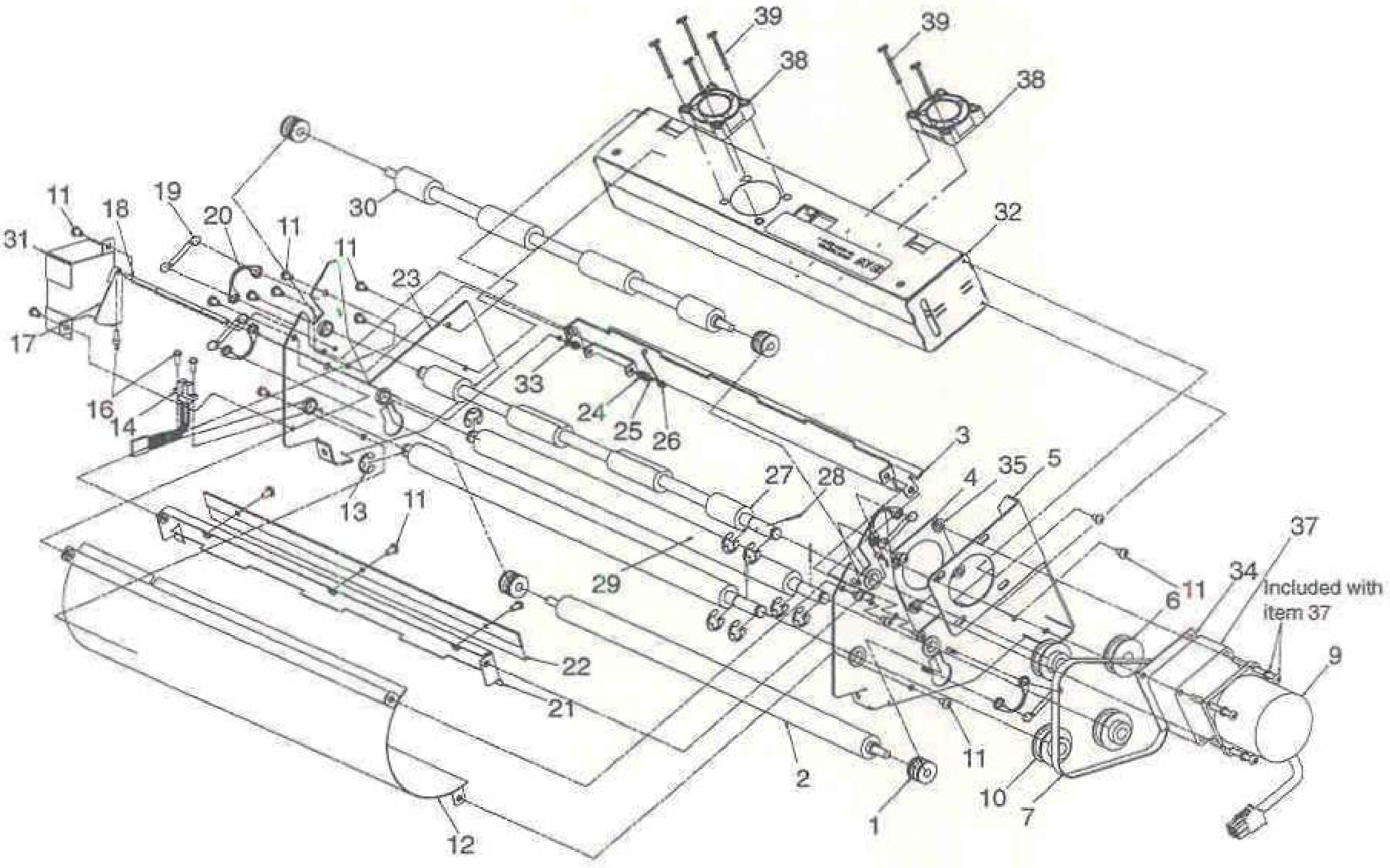
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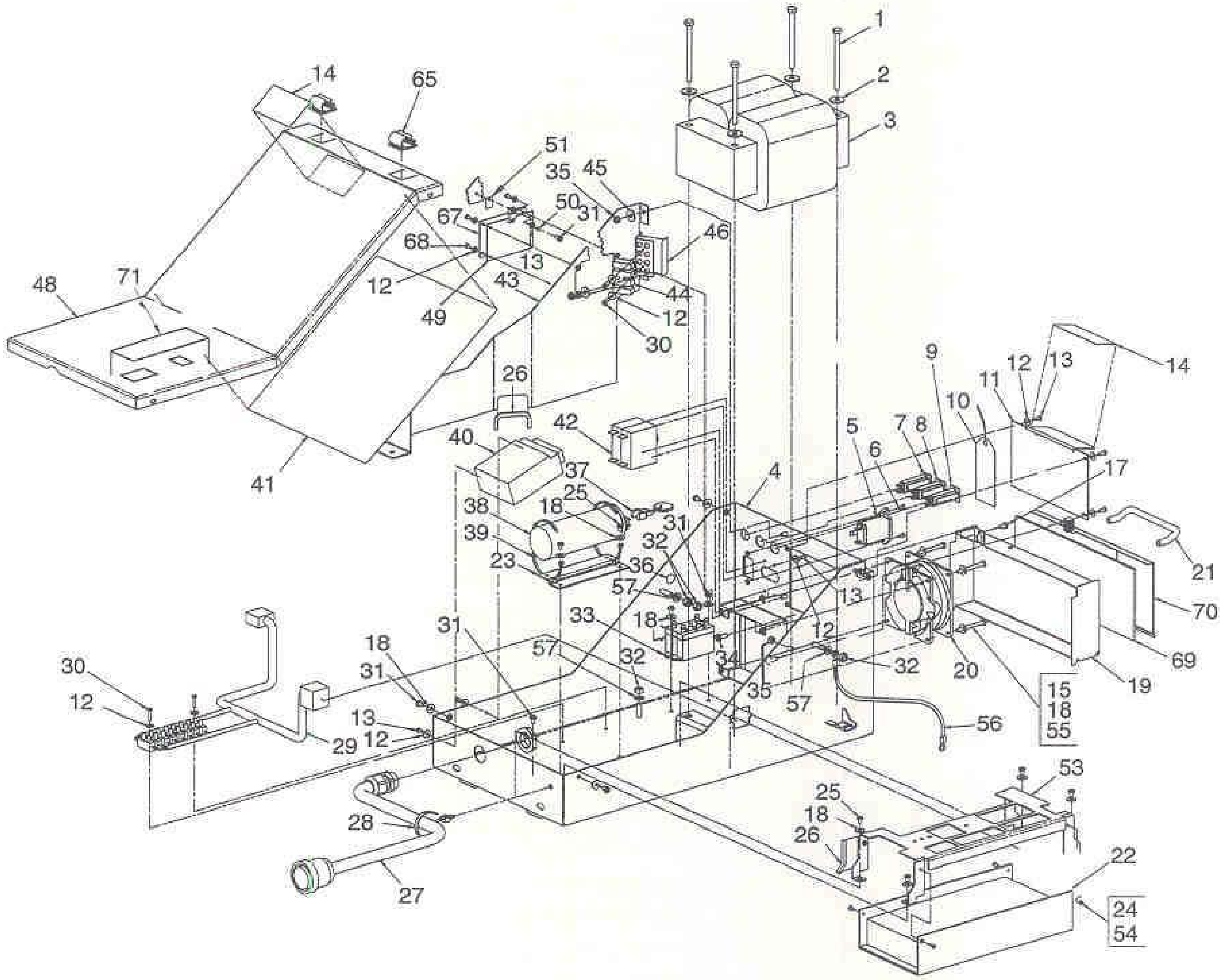
Figure 9-20. Exit Assembly

Item No.	Part Number	Description	Qty
0	78-8094-5660-7	EXIT ASSEMBLY	1
1	78-8094-5463-6	BEARING, Spring	4
2	78-8094-5342-2	ROLLER, NIP, Exit	1
3	Not Available	TRAY, Film, Exit	1
4	78-8092-4011-8	PLATE, Nut, Exit	1
5	Not Available	BRACKET, Right, Exit	1
6	26-1011-7241-4	PULLEY, with 8-32 Set Screw	1
7	26-1011-6535-0	BELT, Stock Drive, .0186 P (40 DP) 175 Grooves .250 W,	1
9	78-8095-9327-6	MOTOR ASSEMBLY, M303, (Shaft With Spline) (See Note 1)	1
10	78-8092-4010-0	PULLEY, Drive	3
11	26-1003-7119-9	SCREW, Mach, Pan Head, Phil, Metric, M4 X 0.7 X 6.0, Sems, External Tooth	19
12	Not Available	GUIDE, Film, Exit	1
13	12-7996-5868-2	RING, Retaining, External, E-Ring	9
14	78-8094-5129-3	990 SWITCH ASSEMBLY, SW304	1
15	26-1003-7115-7	SCREW, Mach, Pan Head, Phil, Metric, M3 X 0.5 X 6.0, Sems, External Tooth	2
16	26-1003-7923-4	SCREW, Cap, Hex Socket, Metric, M2 X 0.4 X 10.0	1
17	78-8094-5619-3	ARM, Film Detector, Exit	1
18	78-8094-5600-3	SHAFT, Film Detector, Exit	1
19	26-1000-6421-6	SPRING, External, .188 OD X .022 Wire Dia X 1.375	4
20	78-8094-5584-9	RETAINER, Roller	4
21	Not Available	BRACKET, Brush	1
22	78-8094-5303-4	BRUSH, Static	1
23	Not Available	BRACKET, Left, Exit	1
24	78-8001-2446-9	BEARING, .1260 Bore X .1718 OD X .078 W	2
25	78-8656-4000-3	RING, Retaining, External, E-Ring	2
26	78-8094-5604-5	SPRING, FILm Detector, Exit	1
27	78-8094-5433-9	ROLLER, Drive, Tray	1
28	26-1000-2561-3	PIN, Dowl, .094 DIA X .500	3
29	78-8094-5343-0	ROLLER, Drive, Exit	2
30	78-8094-5461-0	ROLLER, Slotted, NIP	1
31	Not Available	COVER, Exit	1
32A	78-8094-5540-1	DENSITOMETER ASSEMBLY	1
33	26-1011-6674-7	WASHER, Plain, Nylon, .125 ID X .250 OD X .020	2
34	78-8095-9320-1	BARRIER, Vibration Motor (See Note 1)	1
35	78-8095-9321-9	WASHER, Vibration Motor	4
37	78-8092-4076-1	GEARHEAD, Exit (Ratio 6:1) (See Note 1)	1
38	78-8095-9505-7	FAN ASSEMBLY, Densitometer	2
39	26-1003-6940-9	SCREW, Metric, Mach, M3 X 0.5 X 25, Sems, External Tooth	6

Note 1. If either Motor Assembly (item 9) or Exit Gearhead (item 37) are suspected to be bad, order Items 9, 34 and 37.

Figure 9-21. Power Module Assembly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